



SERVICE MANUAL

MODEL: CM2440 (CM2440, CMS2440F)

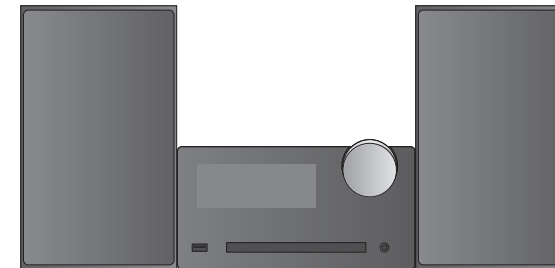
Micro Hi-Fi System

SERVICE MANUAL

MODEL: CM2440
(CM2440, CMS2440F)

CAUTION

BEFORE SERVICING THE UNIT, READ THE "SAFETY PRECAUTIONS"
IN THIS MANUAL.



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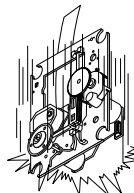
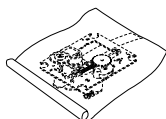
SERVICING PRECAUTIONS

NOTES REGARDING HANDLING OF THE PICK-UP

1. Notes for transport and storage

- 1) The pick-up should always be left in its conductive bag until immediately prior to use.
- 2) The pick-up should never be subjected to external pressure or impact.

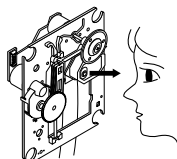
Storage in conductive bag



Drop impact

2. Repair notes

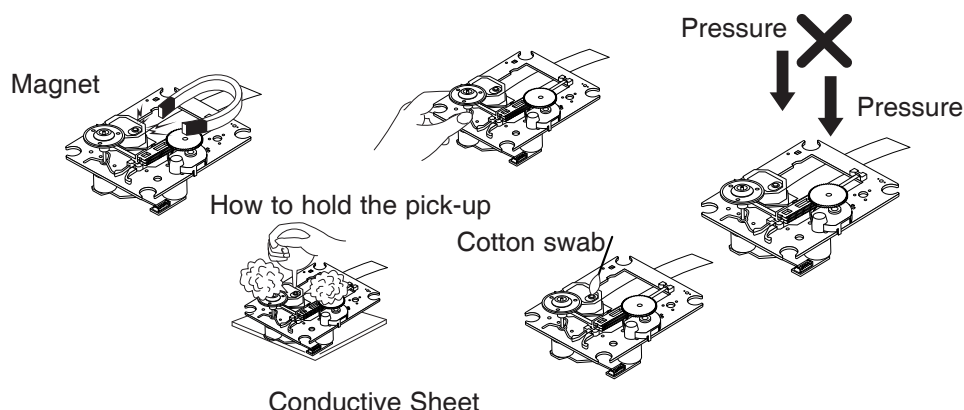
- 1) The pick-up incorporates a strong magnet, and so should never be brought close to magnetic materials.
- 2) The pick-up should always be handled correctly and carefully, taking care to avoid external pressure and impact. If it is subjected to strong pressure or impact, the result may be an operational malfunction and/or damage to the printed-circuit board.
- 3) Each and every pick-up is already individually adjusted to a high degree of precision, and for that reason the adjustment point and installation screws should absolutely never be touched.
- 4) Laser beams may damage the eyes!
Absolutely never permit laser beams to enter the eyes!
Also NEVER switch ON the power to the laser output part (lens, etc.) of the pick-up if it is damaged.



NEVER look directly at the laser beam, and don't allow contact with fingers or other exposed skin.

5) Cleaning the lens surface

If there is dust on the lens surface, the dust should be cleaned away by using an air bush (such as used for camera lens). The lens is held by a delicate spring. When cleaning the lens surface, therefore, a cotton swab should be used, taking care not to distort lens.



6) Never attempt to disassemble the pick-up.

Spring has excess pressure. If the lens is extremely dirty, apply isopropyl alcohol to the cotton swab. (Do not use any other liquid cleaners, because they will damage the lens.) Take care not to use too much of this alcohol on the swab, and do not allow the alcohol to get inside the pick-up.

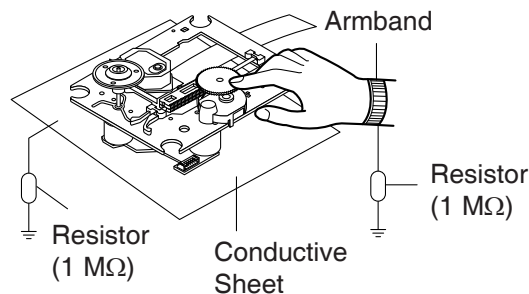
NOTES REGARDING COMPACT DISC PLAYER REPAIRS

1. Preparations

- 1) Compact disc players incorporate a great many ICs as well as the pick-up (laser diode). These components are sensitive to, and easily affected by, static electricity. If such static electricity is high voltage, components can be damaged, and for that reason components should be handled with care.
- 2) The pick-up is composed of many optical components and other high-precision components. Care must be taken, therefore, to avoid repair or storage where the temperature or humidity is high, where strong magnetism is present, or where there is excessive dust.

2. Notes for repair

- 1) Before replacing a component part, first disconnect the power supply lead wire from the unit
- 2) All equipment, measuring instruments and tools must be grounded.
- 3) The workbench should be covered with a conductive sheet and grounded.
When removing the laser pick-up from its conductive bag, do not place the pick-up on the bag. (This is because there is the possibility of damage by static electricity.)
- 4) To prevent AC leakage, the metal part of the soldering iron should be grounded.
- 5) Workers should be grounded by an armband (1 M Ω)
- 6) Care should be taken not to permit the laser pick-up to come in contact with clothing, in order to prevent static electricity changes in the clothing to escape from the armband.
- 7) The laser beam from the pick-up should NEVER be directly facing the eyes or bare skin.



ESD PRECAUTIONS

Electrostatically Sensitive Devices (ESD)



Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive Devices (ESD). Examples of typical ESD devices are integrated circuits and some field-effect transistors and semiconductor chip components. The following techniques should be used to help reduce the incidence of component damage caused by static electricity.

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging wrist strap device, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ESD devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ESD devices.
4. Use only an anti-static solder removal device. Some solder removal devices not classified as "anti-static" can generate electrical charges sufficient to damage ESD devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ESD devices.
6. Do not remove a replacement ESD device from its protective package until immediately before you are ready to install it. (Most replacement ESD devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive materials).
7. Immediately before removing the protective material from the leads of a replacement ESD device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

CAUTION : BE SURE NO POWER IS APPLIED TO THE CHASSIS OR CIRCUIT, AND OBSERVE ALL OTHER SAFETY PRECAUTIONS.

8. Minimize bodily motions when handling unpackaged replacement ESD devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ESD device).

CAUTION. GRAPHIC SYMBOLS

	THE LIGHTNING FLASH WITH APOWHEAD SYMBOL. WITHIN AN EQUILATERAL TRIANGLE, IS INTENDED TO ALERT THE SERVICE PERSONNEL TO THE PRESENCE OF UNINSULATED "DANGEROUS VOLTAGE" THAT MAY BE OF SUFFICIENT MAGNITUDE TO CONSTITUTE A RISK OF ELECTRIC SHOCK.
	THE EXCLAMATION POINT WITHIN AN EQUILATERAL TRIANGLE IS INTENDED TO ALERT THE SERVICE PERSONNEL TO THE PRESENCE OF IMPORTANT SAFETY INFORMATION IN SERVICE LITERATURE.

OPTION & HIDDEN KEY

1. How to check S/W version number?

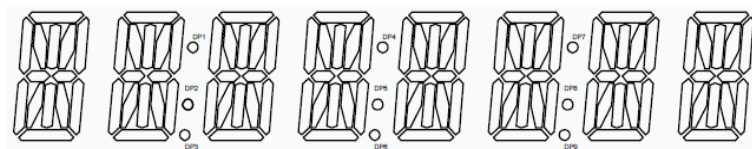
Step 1: Press and hold Stop key (Set) + Press and hold Play key (RMC).

"CM2540 _VER03_01/17_000 MCU VER03"

Bx8805 Month/Date Option Sub MCU

Step 2: To return to Previous screen, repeat Step1 operation.

Step 3: In Step1 status, if press Prev Key on set, full screen display will be appeared.



< Full screen display >

Step 4: In Step3 status, if press Next key on set, the key tesing mode will be started as below.

"KEY - 01"

Key number

Step 5: Press and hold Stop key on set, the system will be returned to normal screen mode.

2. How to make a system reset?

Step 1: Press and hold Stop key (Set) + Press and hold ◀ key (RMC).

"E2P CLEAR"

Step 2: After 2 seconds, the system will be power off automatically,
and all of system data will be reset except system option.

3. How to set the system option?

Step 1: Press and hold Stop key (Set) + Press and hold ▶ key (RMC).

"OPT 0000"

Option Table			
Digit 3	Digit 2	Digit 1	Digit 0
0 : FM/RDS 1 : FM only	0 : 87.5 kHz ~ 108 MHz (50 kHz step) 1 : 87.5 kHz ~ 108 MHz (100kHz step)	0 : Support ID3/TAG display 1 : Not support	0 : USB record 1 : Not support

Step 2: To change digit number, press ◀ or ▶ keys on RMC.

Step 3: To change option value, press REPEAT key on RMC.

Step 4: To confirm current settings, repeat Step1 operation.

"E2P CLEAR"

Step 5: After 2 seconds, the system will be reset automatically. And new option is applied to system.

4. How to set the door lock option?

Step 1: In **CD mode**, press and hold Stop key (Set) + Press and hold Stop key (RMC).

"LOCKED" : after setting, the CD Door can't be opened.

Step 2: In **CD mode**, to change "Unlock" option, press and hold Stop key (Set) + Press and hold STOP Key (RMC).

"UNLOCKED"

5. How to upgrade main and sub MCU firmware?

1) Upgrade Main MCU (MCS Bx8805) : Firmware name is "CM2x40_VERxx_XXXXXX.MCS"

Step 1: All of files in USB drive should be removed. Then copy firmware to USB device.

Step 2: In USB mode, insert USB device to socket. Then upgrade process will be started automatically as below.

"NO USB" ⇒ "SEARCH" ⇒ "UPGRADE"

Step 3: After finishing upgrade firmware, "SUCCESS" message will be shown during 2 seconds.

Then the set will be power off automatically.

"SUCCESS"

2) Upgrade Sub MCU (Samsung S3F8419) : Firmware name is "CM2x40_MCU_VERxx_XXXXXX.BIN "

Step 1: All of files in USB drive should be removed. Then copy firmware to USB device.

Step 2: In USB mode, insert USB device to socket. Then upgrade process will be started automatically as below.

"NO USB" ⇒ "SEARCH" ⇒ "MCU UP"

Step 3 : During upgrading, the progress will be shown as below

"[13]" ... "[73]" "[100]"

Step 4 : After finishing upgrade firmware, "Success" message will be shown without auto power off.

So user need to plug out AC code for restarting the set.

"SUCCESS"

SPECIFICATIONS

• GENERAL

Power supply	Refer to the main label.
Power consumption	Refer to the main label.
Net Weight	2.2 kg
External dimensions (W x H x D)	(229 x 130 x 236) mm
Operating conditions Temperature	5 °C to 35 °C (41 °F to 95 °F)
Operating humidity	5 % to 85 %

• INPUTS

PORT. IN	0.7 Vrms (3.5 mm stereo jack)
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• TUNER

FM Tuning Range	87.5 MHz to 108.0 MHz or 87.50 MHz to 108.00 MHz
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• AMPLIFIER

Output Power	50W + 50 W
T.H.D	10 %

• CD

Frequency Response	40 Hz to 20 kHz
Signal-to-noise ratio	70 dB
Dynamic range	55 dB

• USB

USB Version	USB 2.0 or USB 1.1
Bus Power Supply	5 V \pm 500 mA

• SPEAKERS

Type	2 Way 2 Speaker
Impedance	6 Ω
Rated Input Power	50 W
Max. Input Power	100 W
Net Dimensions (WxHxD)	(150 x 251 x 150) mm
Net Weight(1EA)	1.8 kg

- Design and specifications are subject to change without notice.

SECTION 2

CABINET & MAIN CHASSIS

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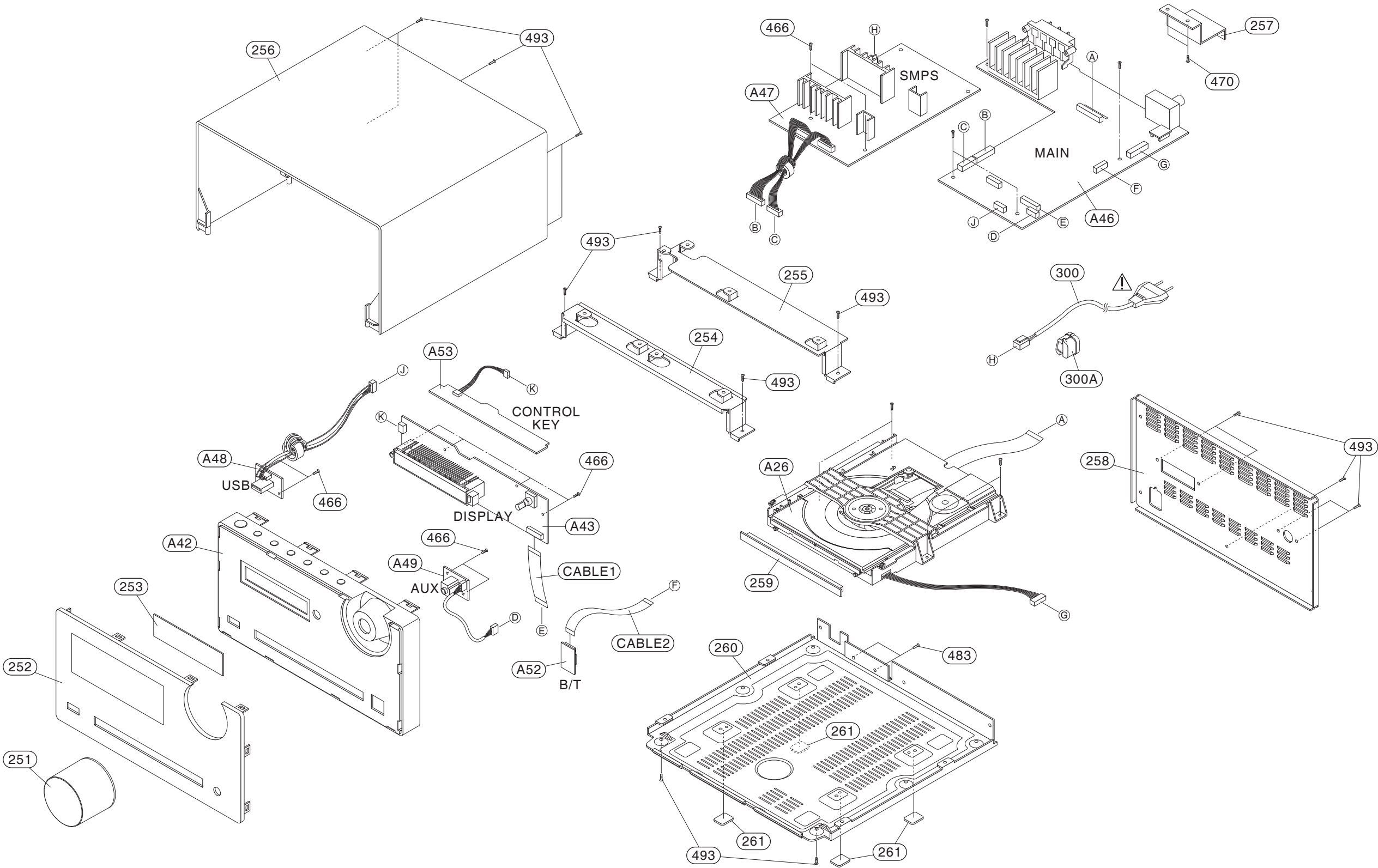
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MEMO

EXPLODED VIEWS
1. CABINET AND MAIN FRAME SECTION (CM2440)

NOTES) THE EXCLAMATION POINT WITHIN AN EQUILATERAL TRIANGLE IS INTENDED TO ALERT THE SERVICE PERSONNEL TO THE PRESENCE OF IMPORTANT SAFETY INFORMATION IN SERVICE LITERATURE.



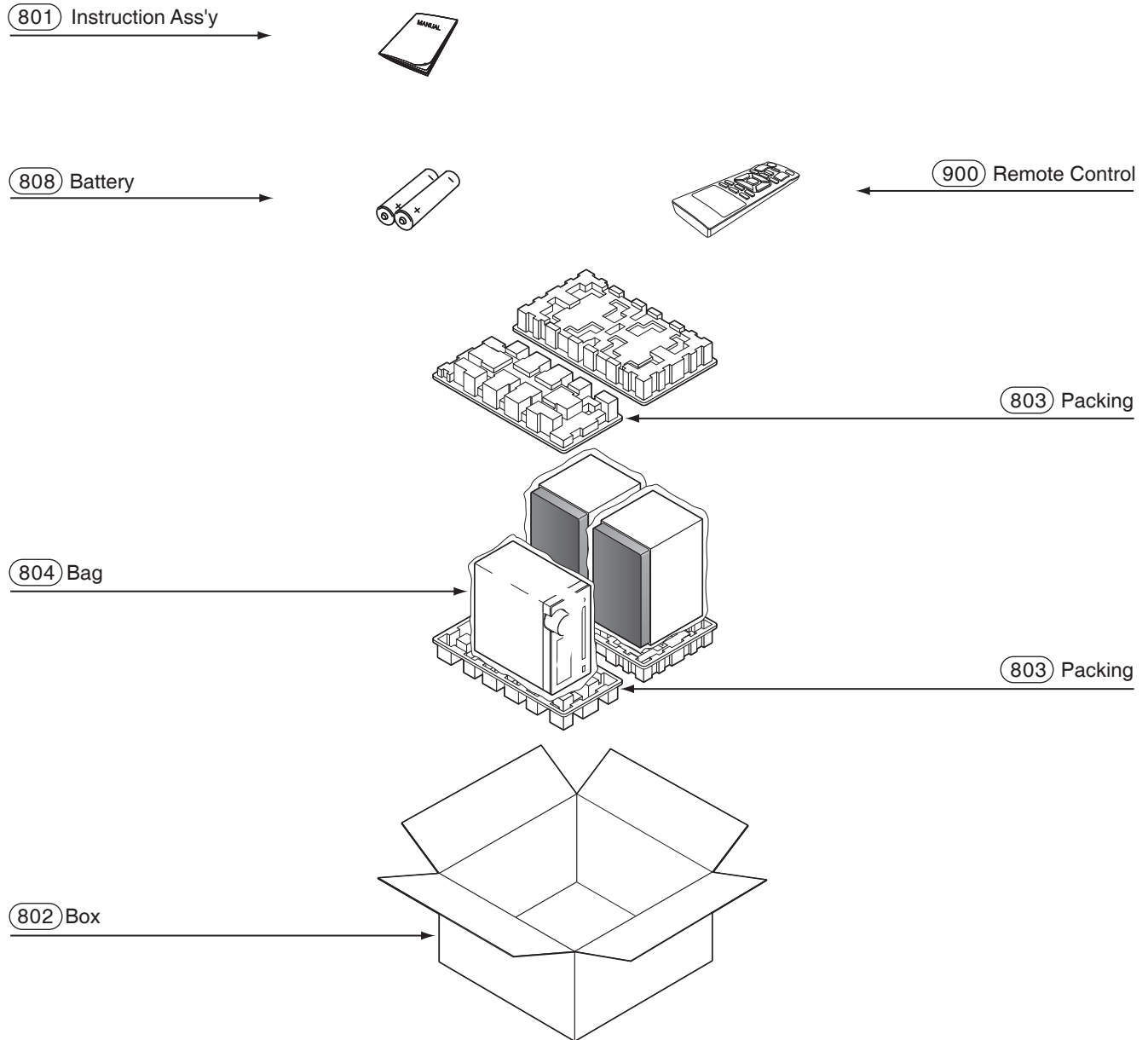
MEMO

Handwriting practice area for page 2-5, featuring 20 horizontal dotted lines.

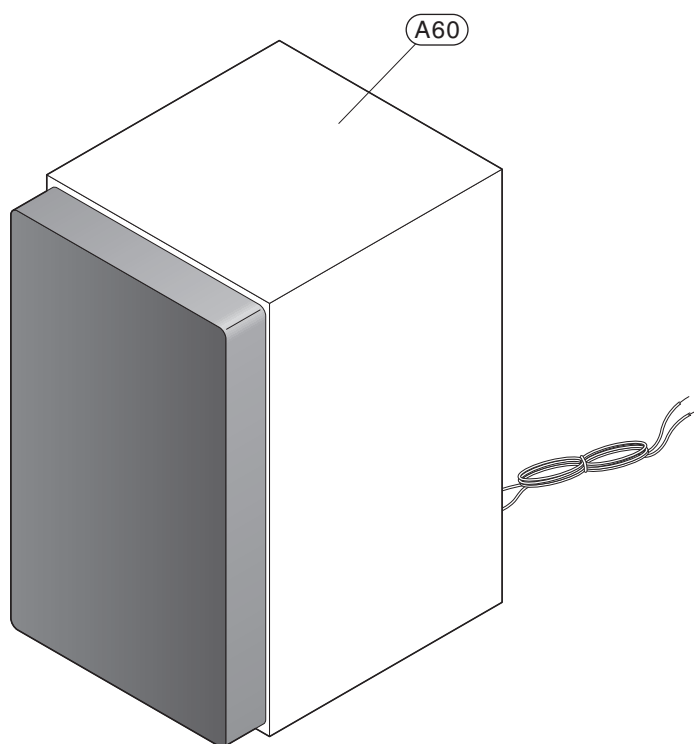
MEMO

Handwriting practice area for page 2-6, featuring 20 horizontal dotted lines.

2. PACKING ACCESSORY SECTION



3. SPEAKER SECTION (CMS2440F)



SECTION 3

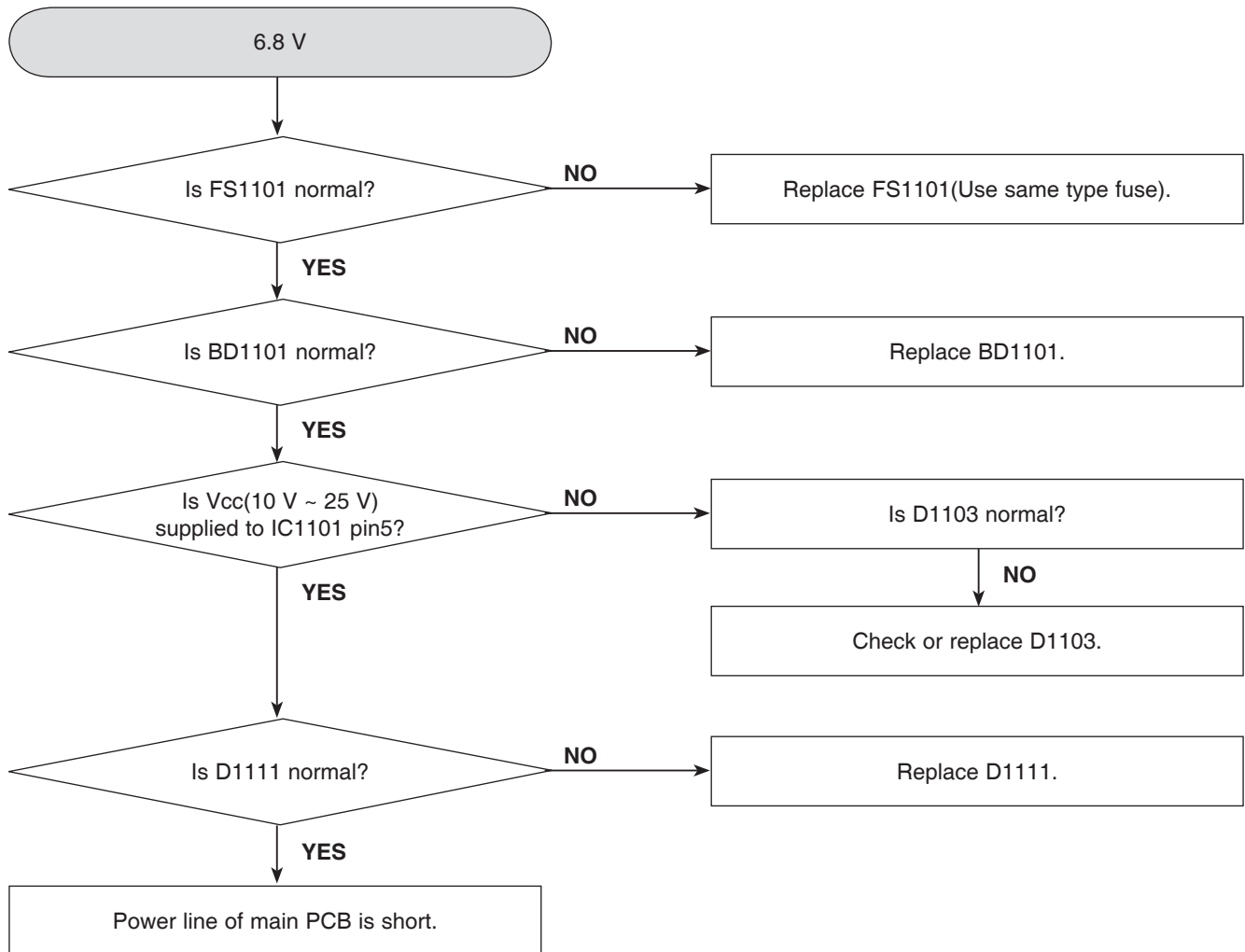
ELECTRICAL

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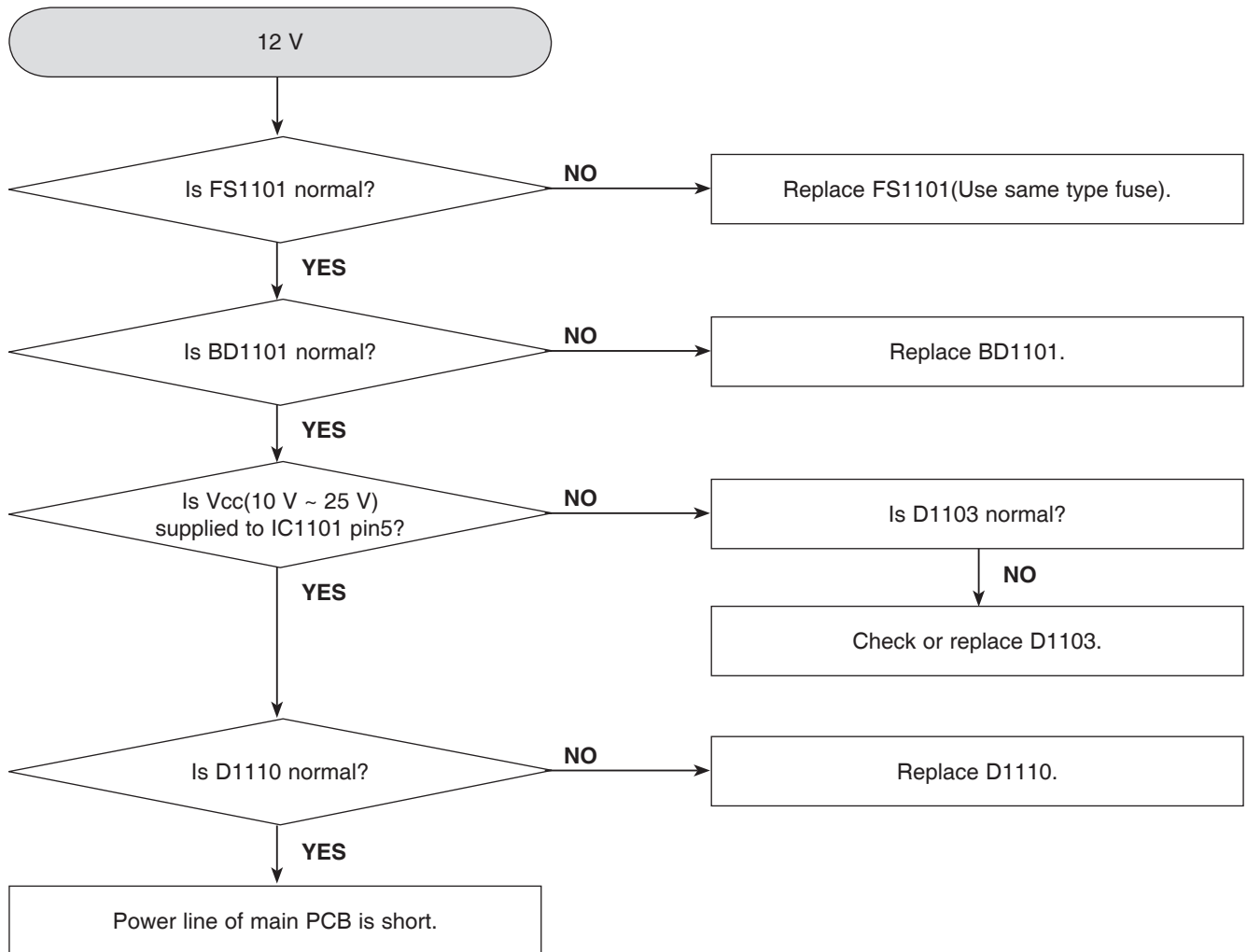
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ELECTRICAL TROUBLESHOOTING GUIDE

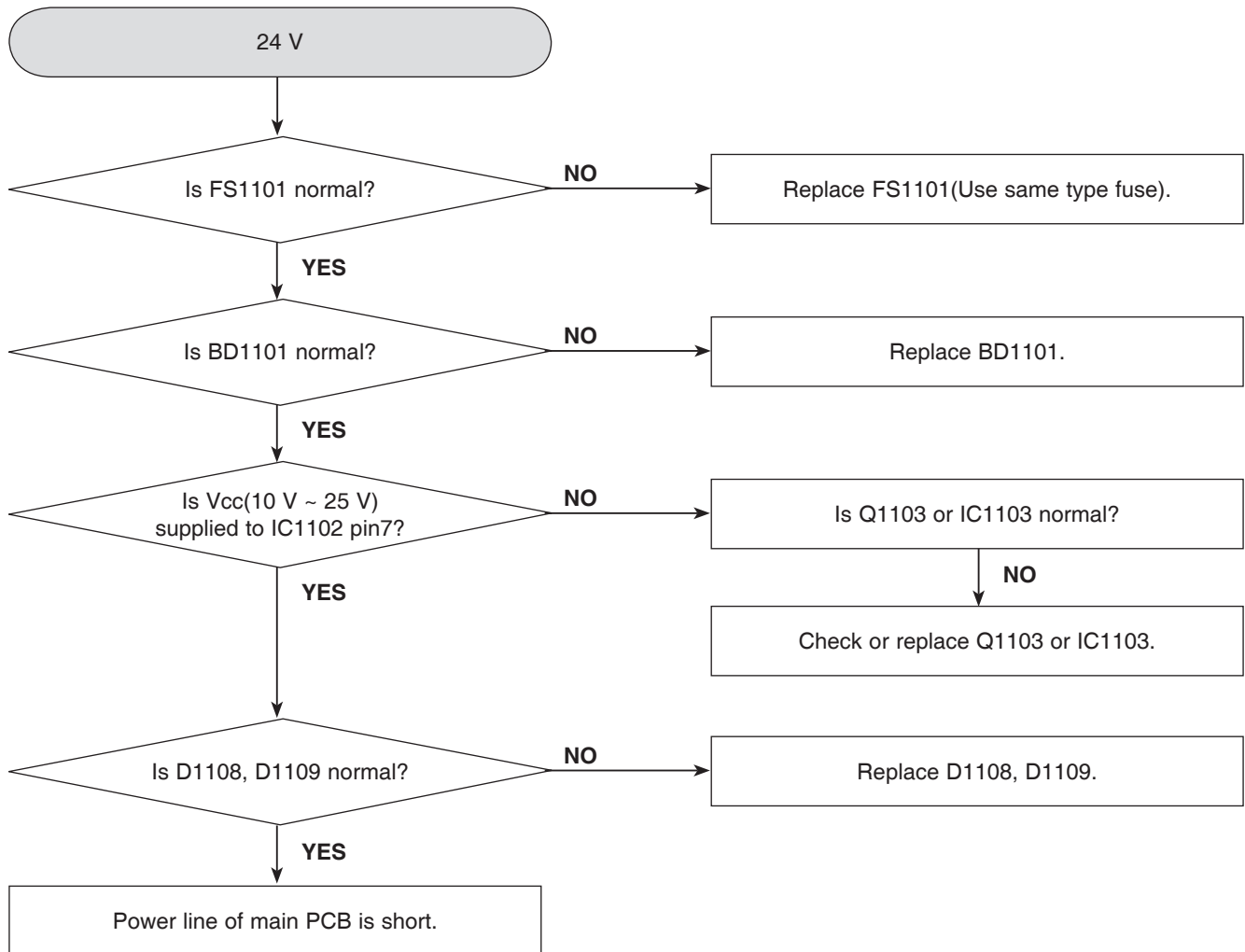
1. SMPS PART



ELECTRICAL TROUBLESHOOTING GUIDE

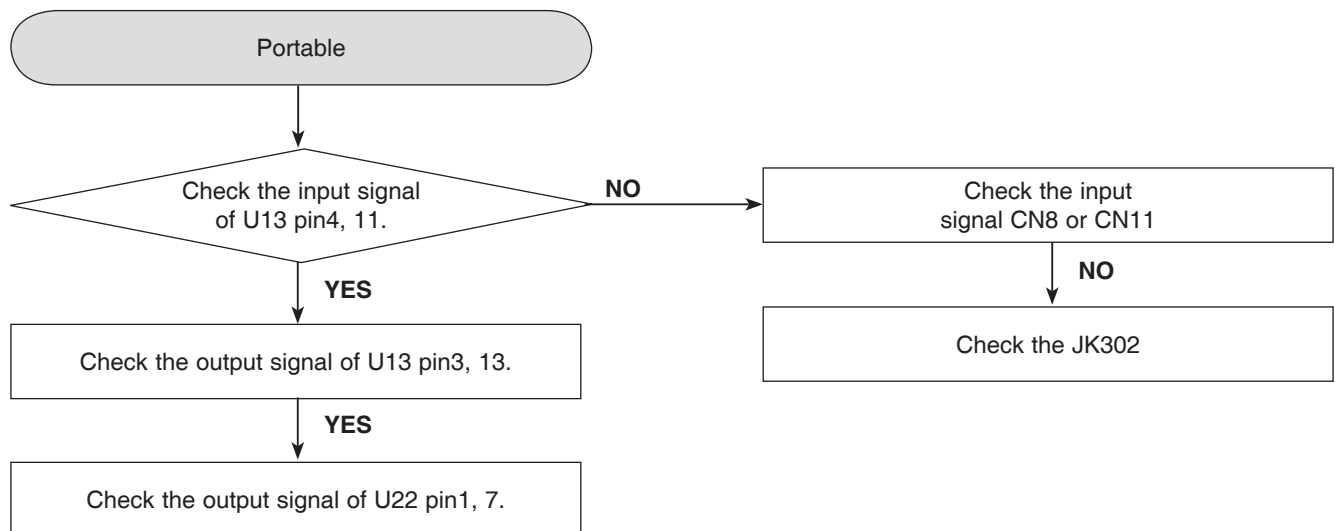
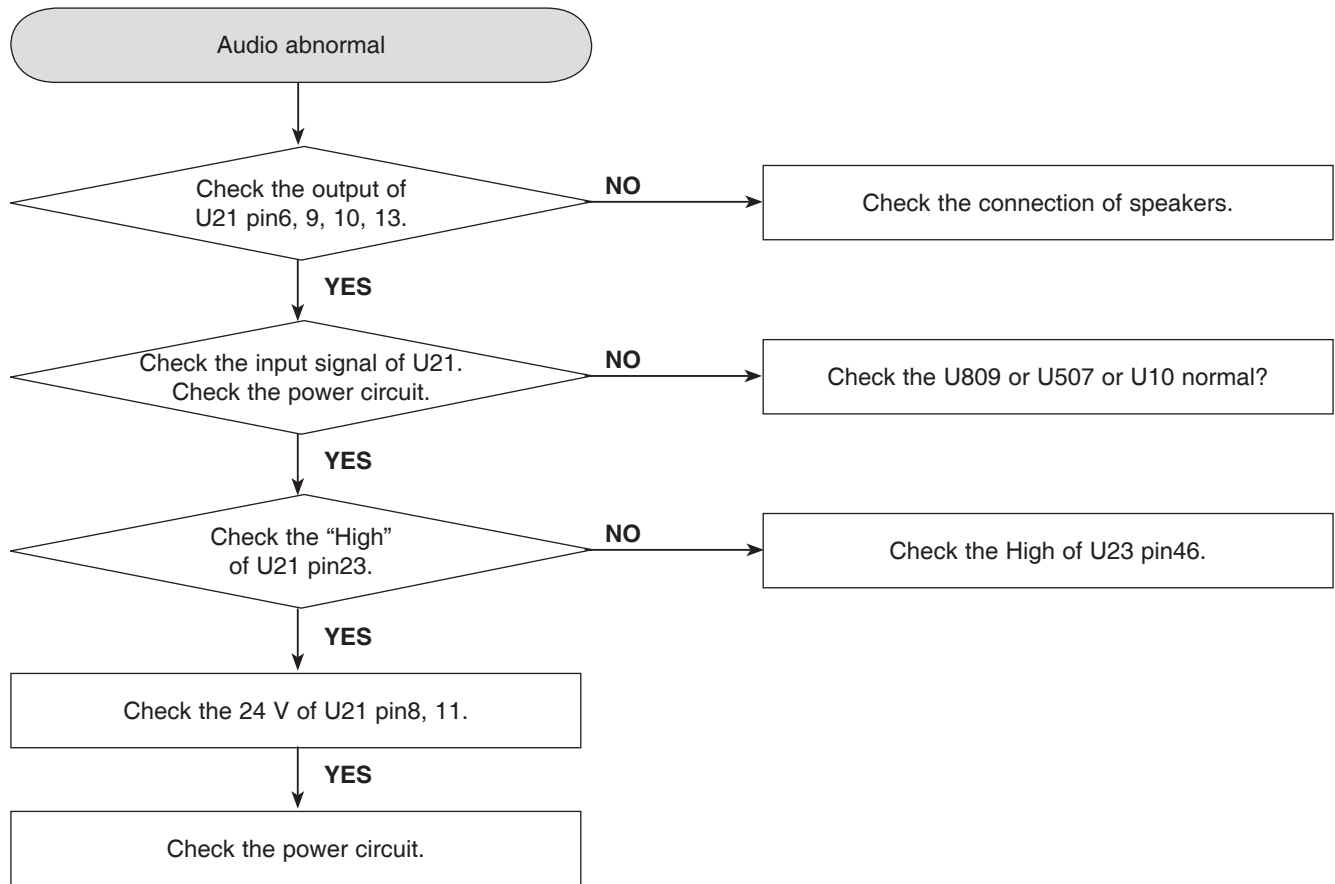


ELECTRICAL TROUBLESHOOTING GUIDE

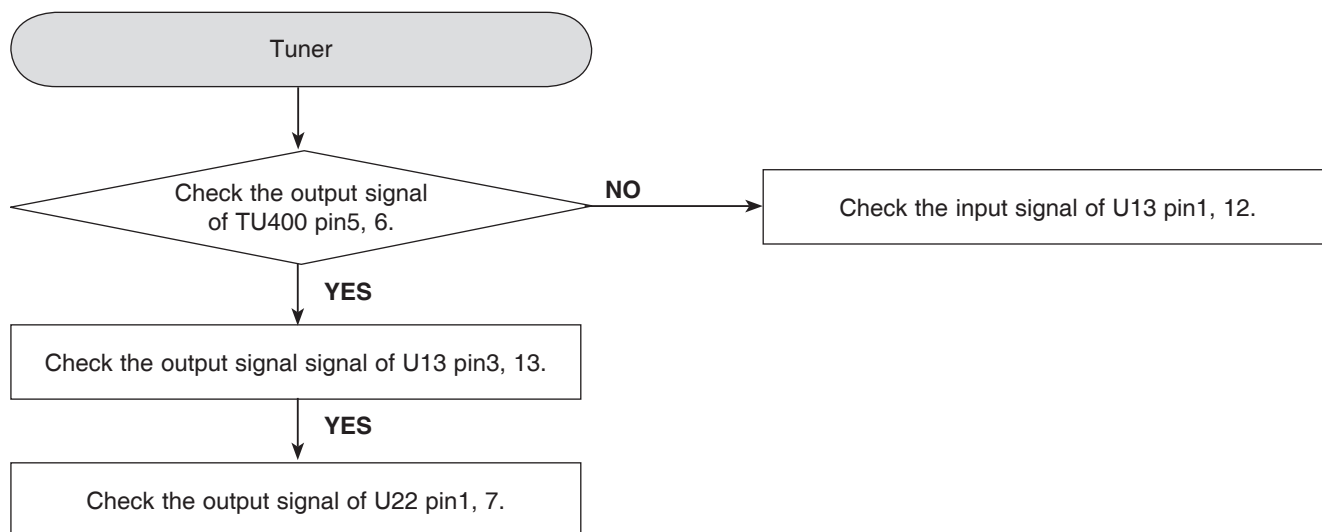
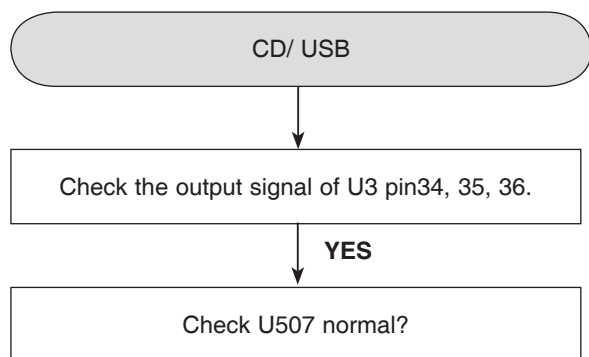


ELECTRICAL TROUBLESHOOTING GUIDE

2. AUDIO ABNORMAL

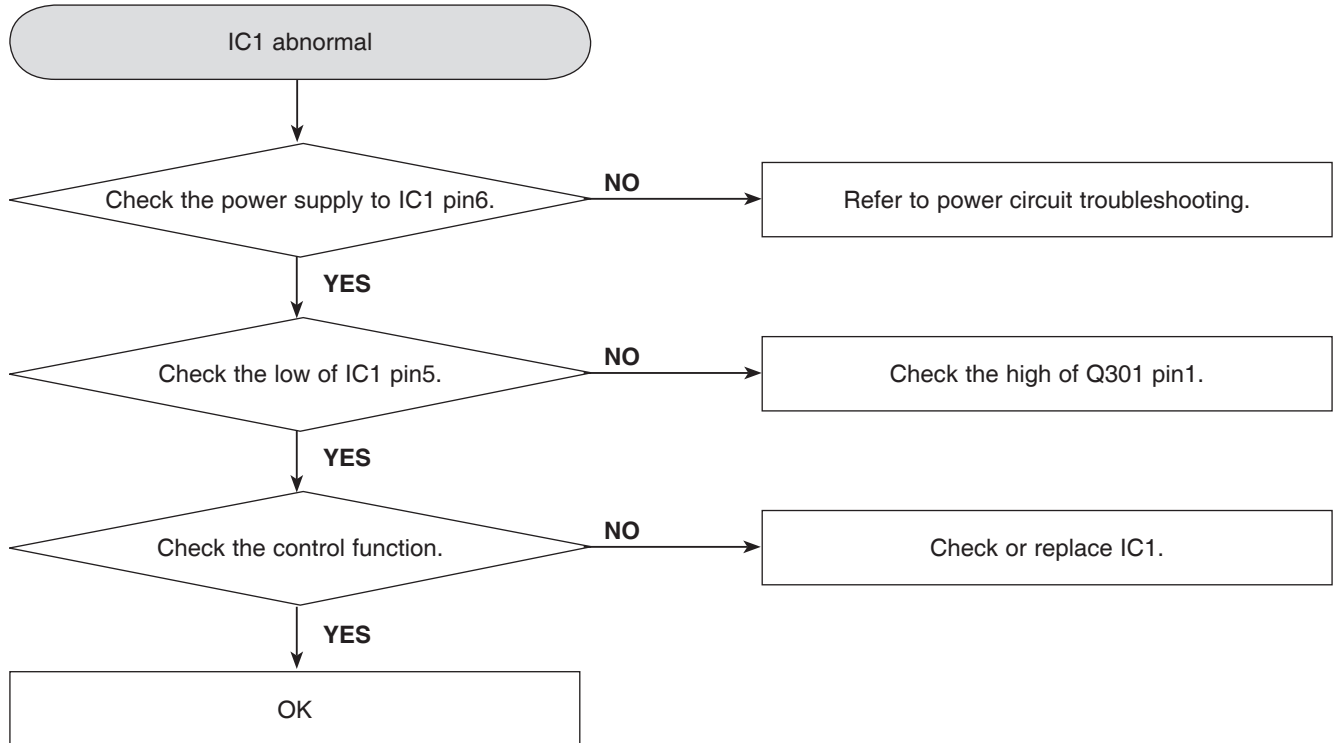


ELECTRICAL TROUBLESHOOTING GUIDE

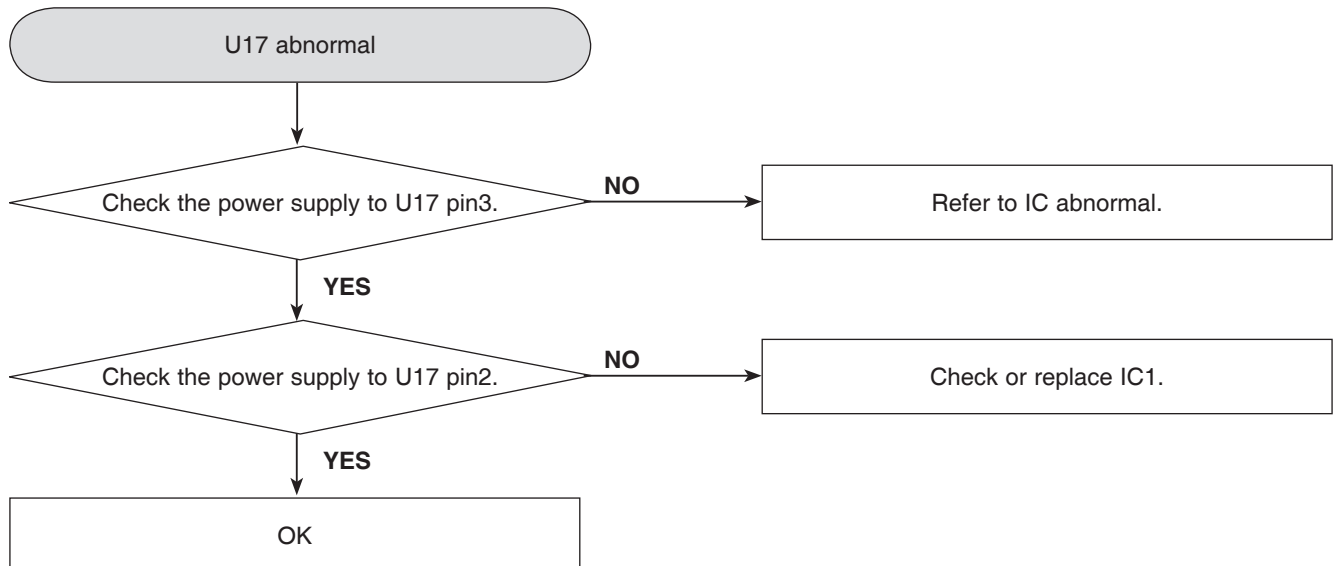


ELECTRICAL TROUBLESHOOTING GUIDE

3. IC1 ABNORMAL

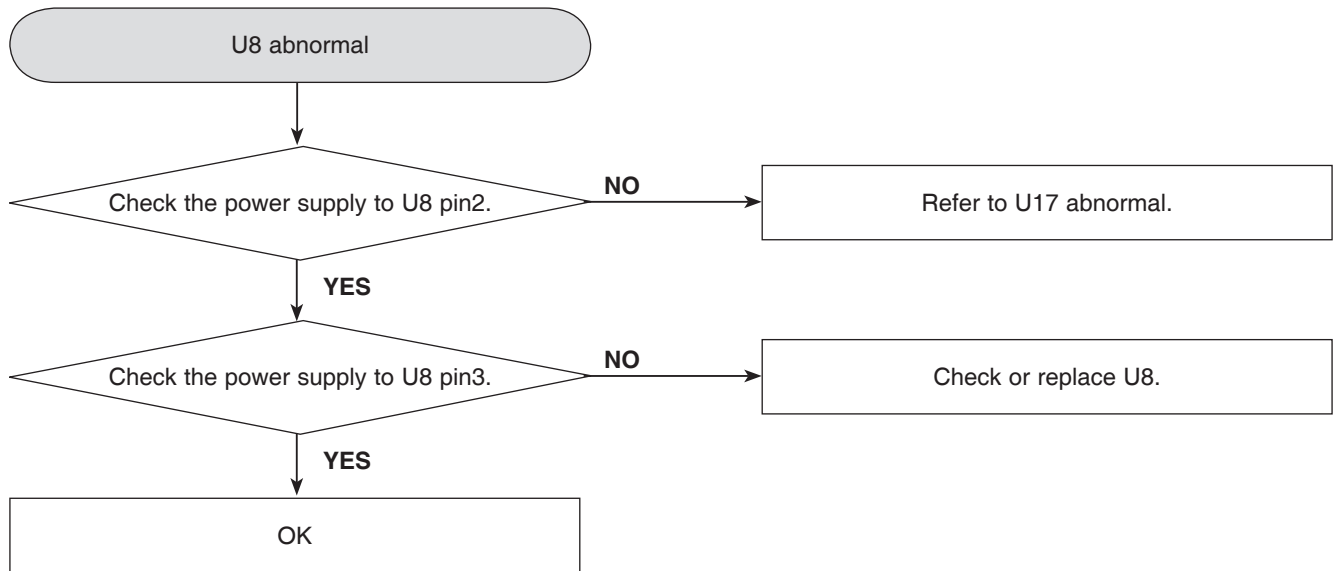


4. U17 ABNORMAL

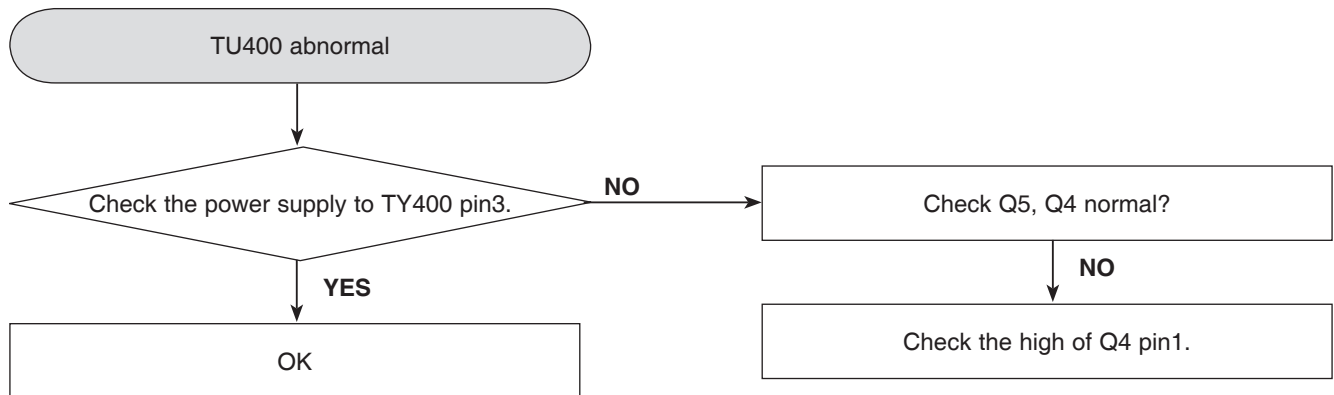


ELECTRICAL TROUBLESHOOTING GUIDE

5. U8 ABNORMAL

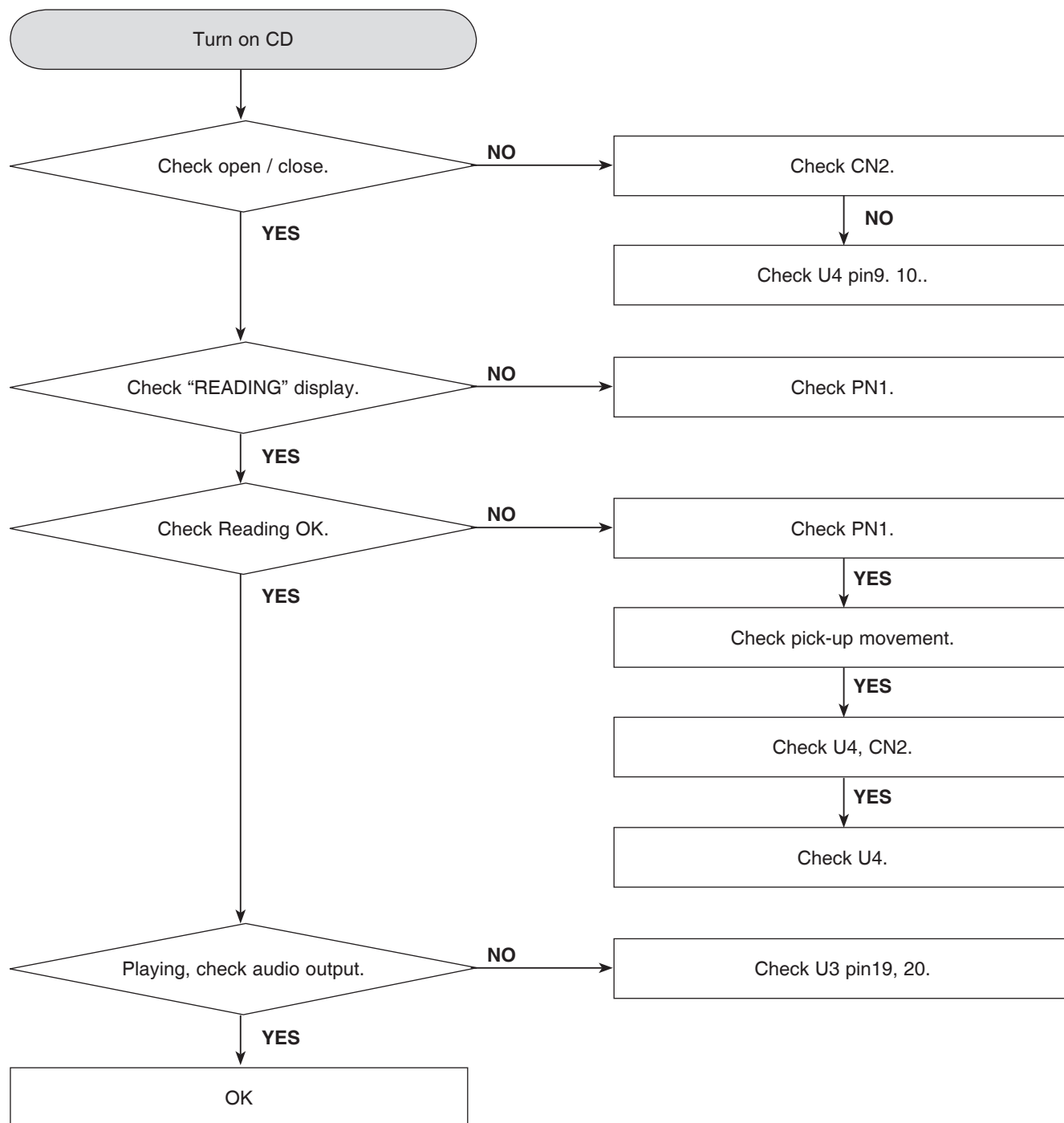


6. TU400 ABNORMAL



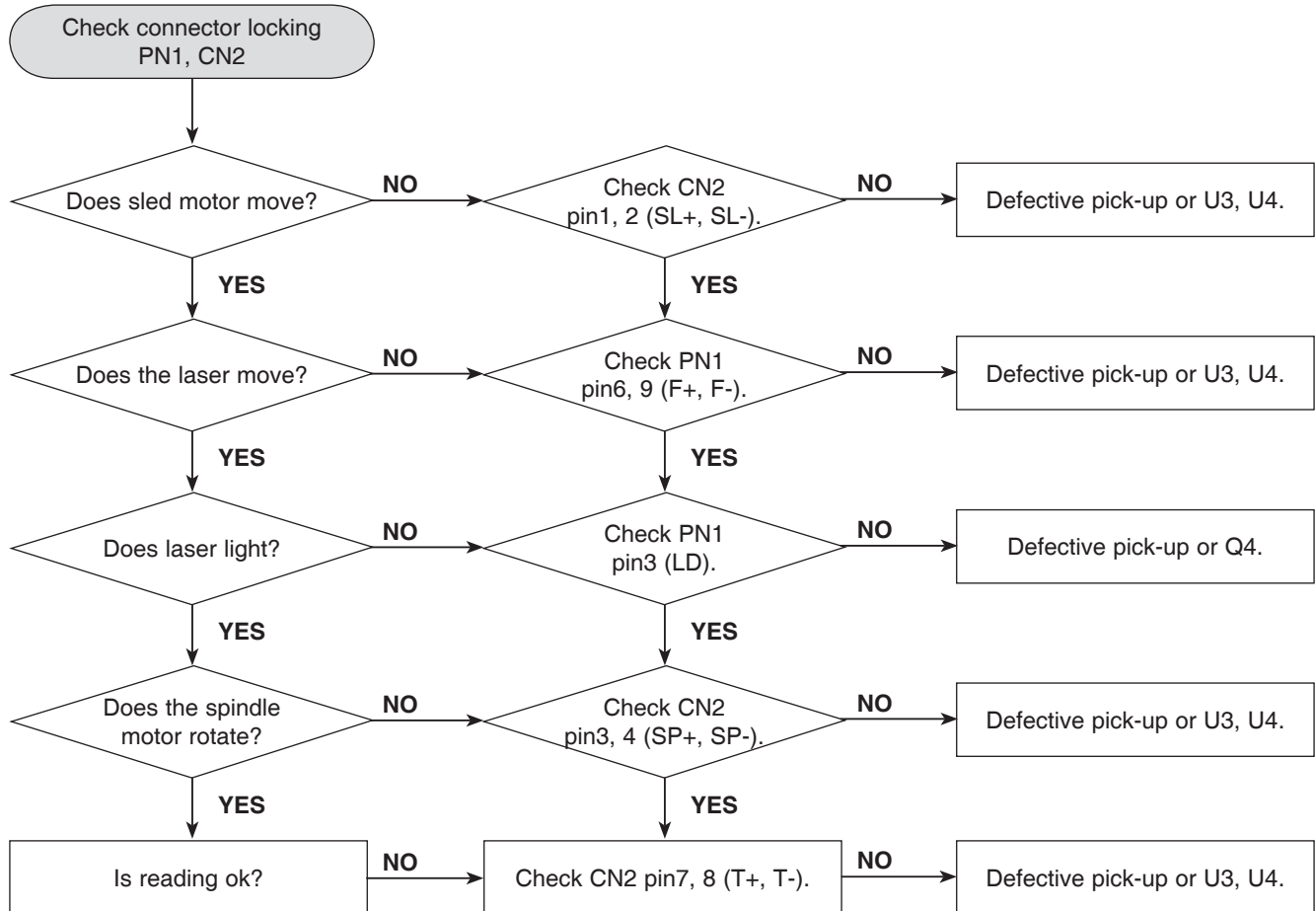
ELECTRICAL TROUBLESHOOTING GUIDE

7. CD PART



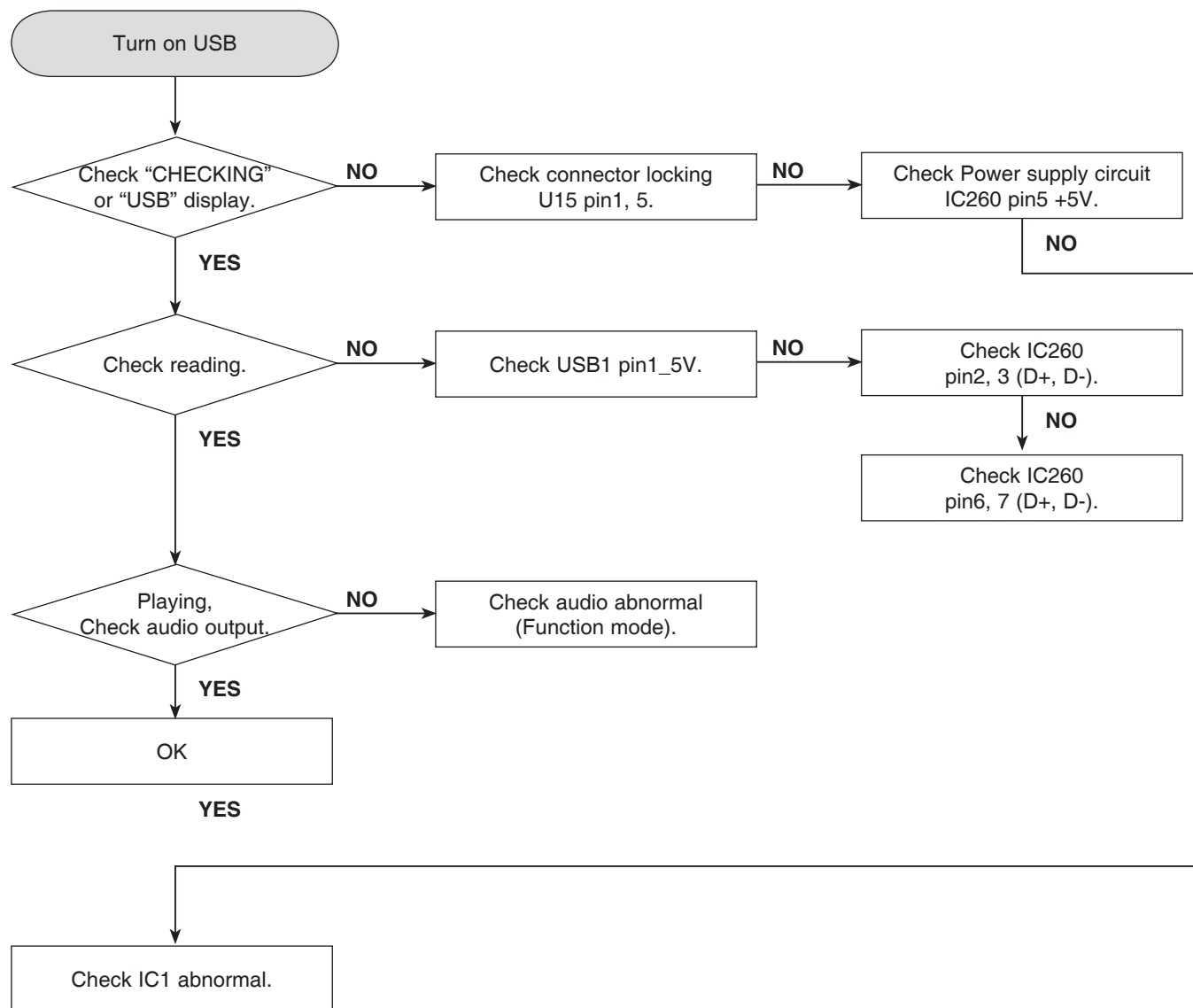
ELECTRICAL TROUBLESHOOTING GUIDE

8. CD READING CHECK



ELECTRICAL TROUBLESHOOTING GUIDE

9. USB PART



WAVEFORMS OF MAJOR CHECK POINT

1. WHEN POWER ON, RESET & DATA ETC WAVEFORM

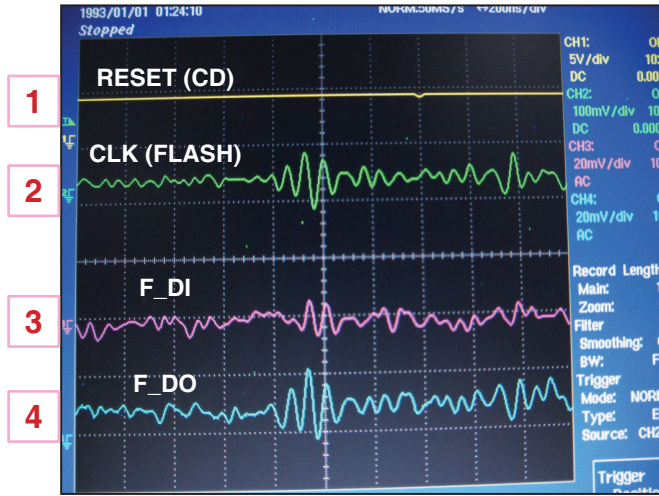


Figure 1-1. CD

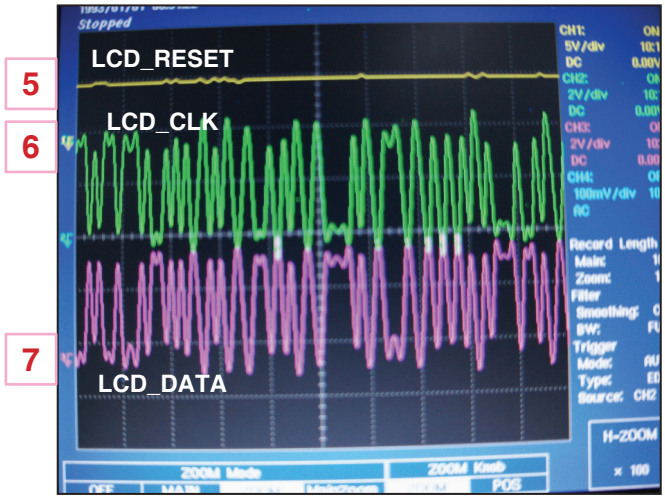
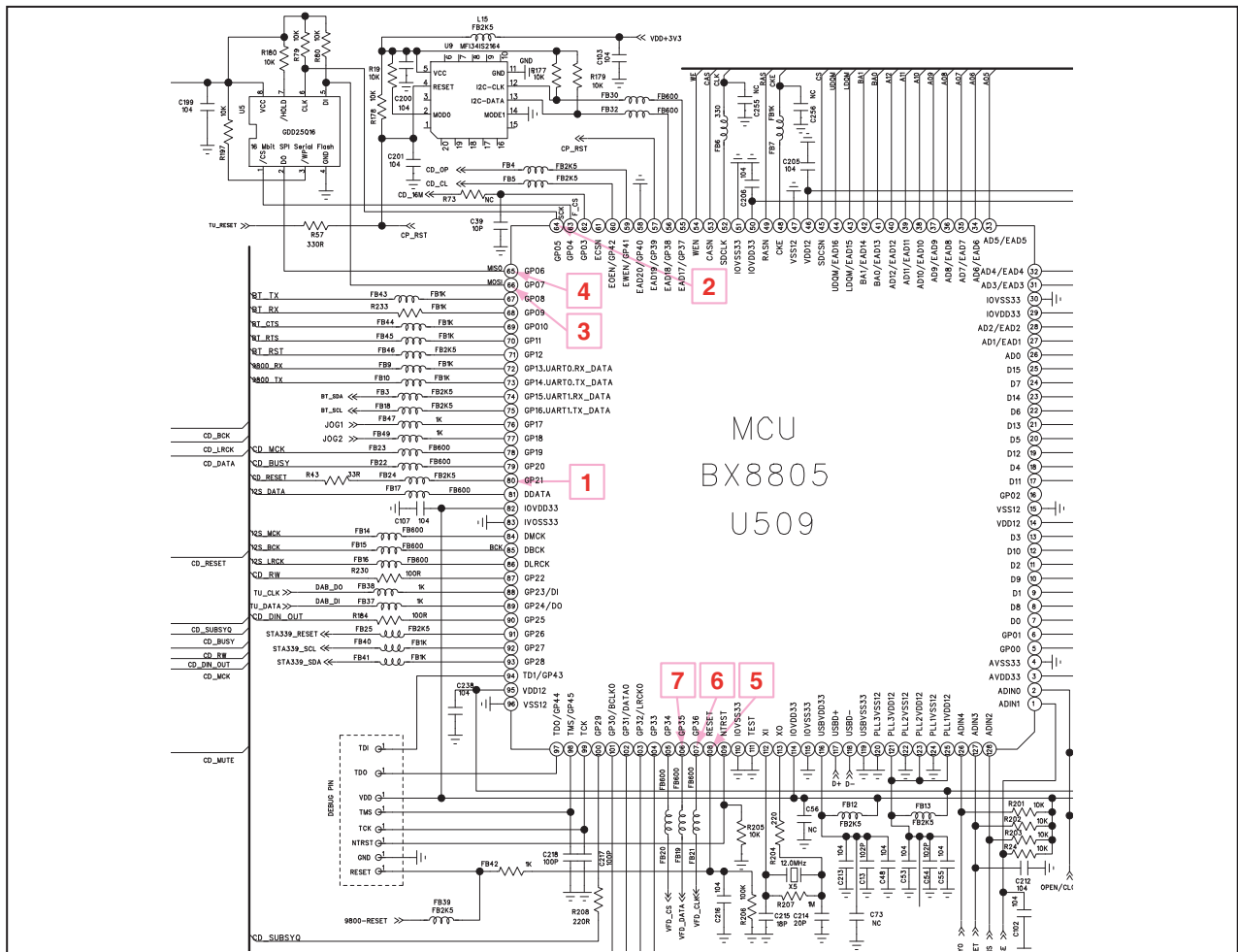


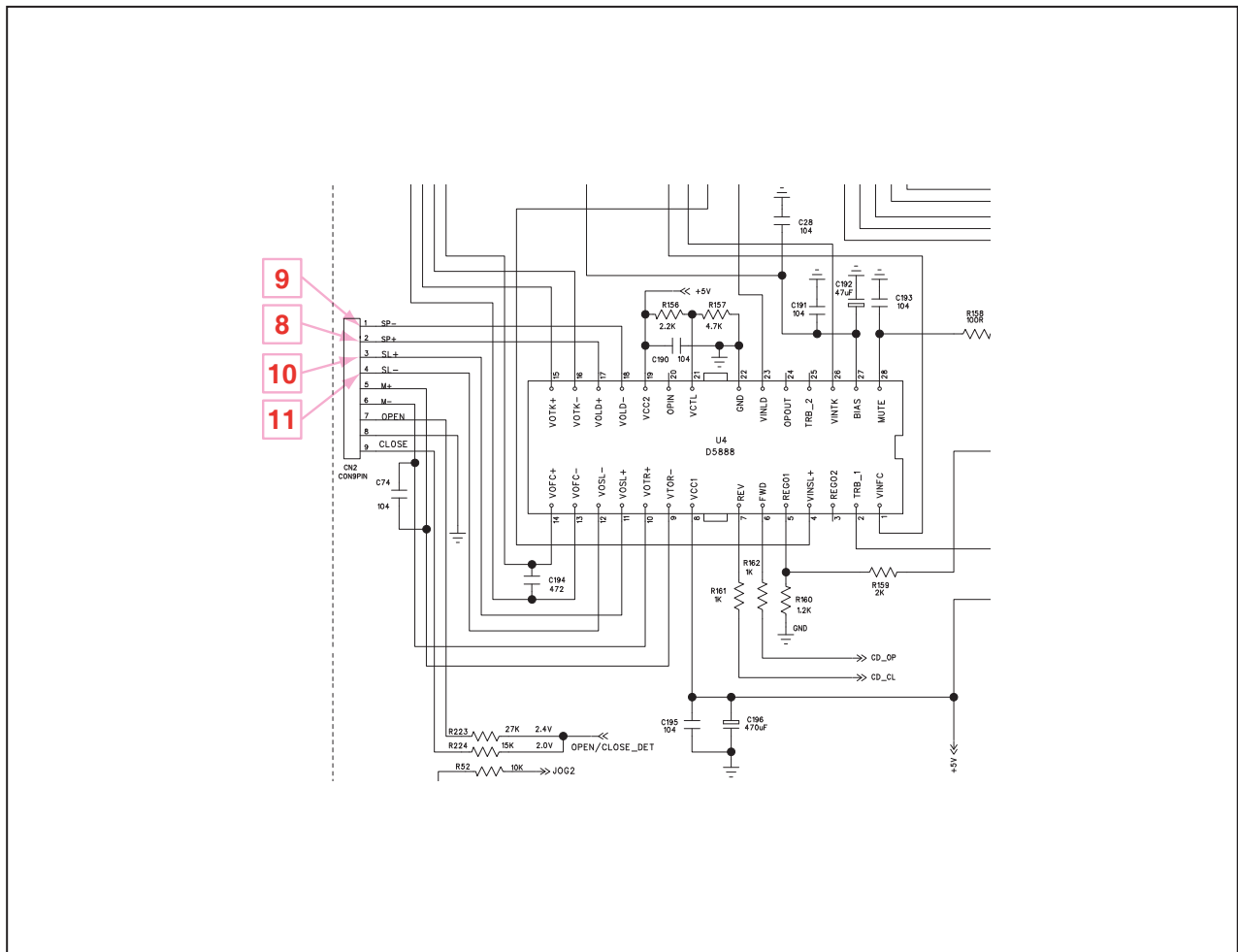
Figure 1-2. LCD



2. STARTING ACTION WAVEFORM IN MD DEVICE (SLED HOME)



Figure 2. At power on



3. AT FIRST ACTION, FOCUS SIGNAL A, B, C, D

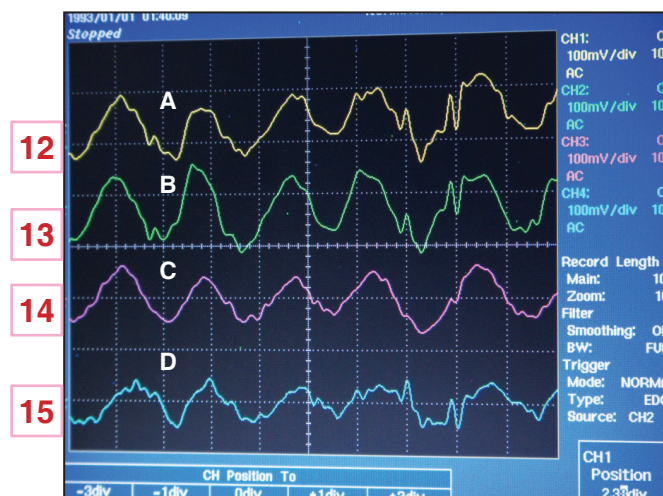
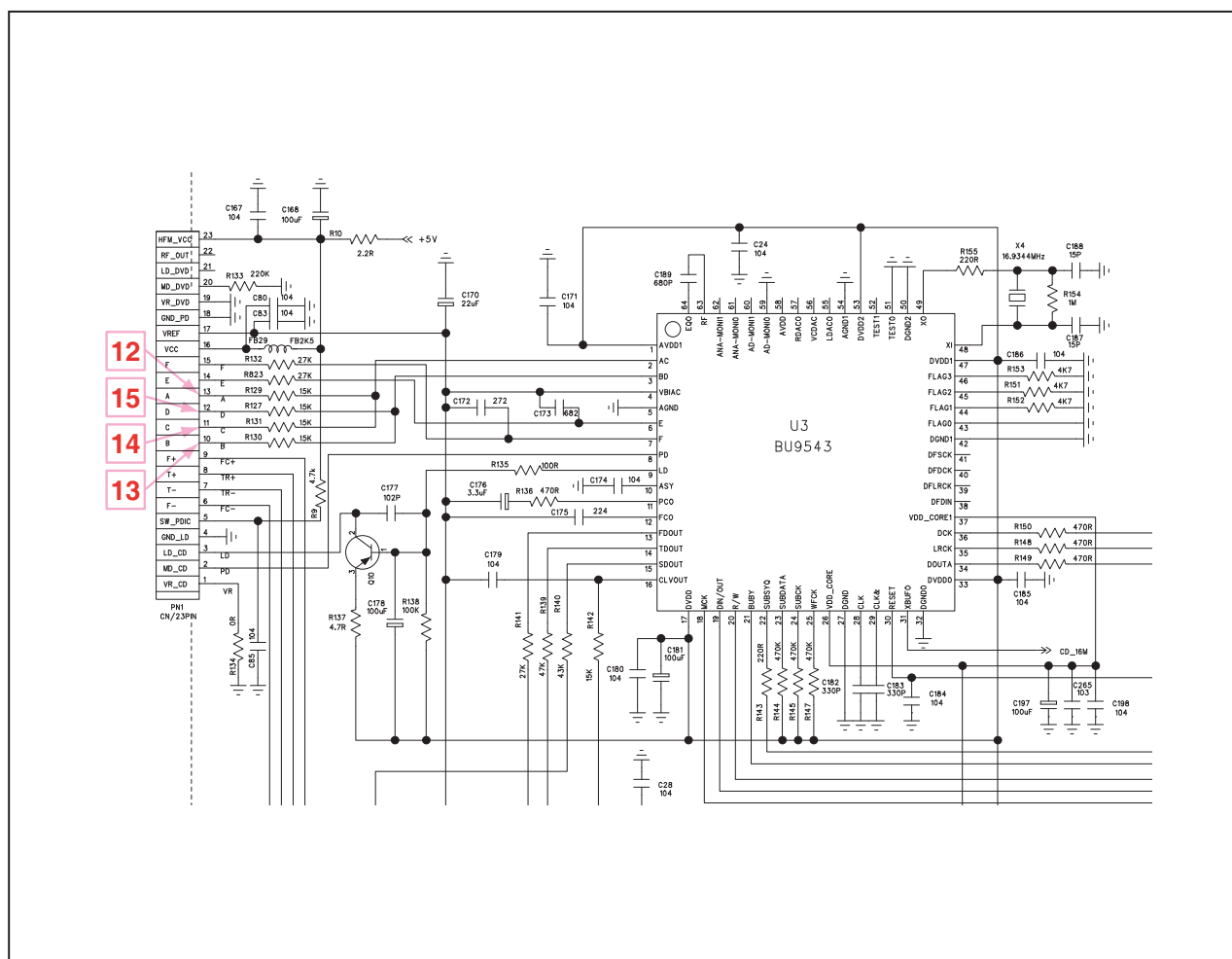


Figure 3.



4. WHEN USB FUNCTION OPERATING

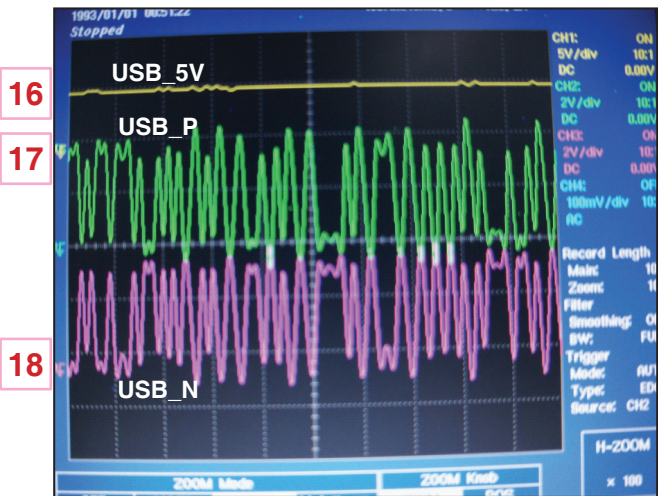
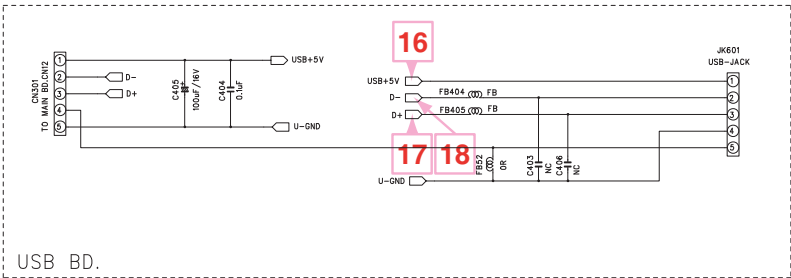


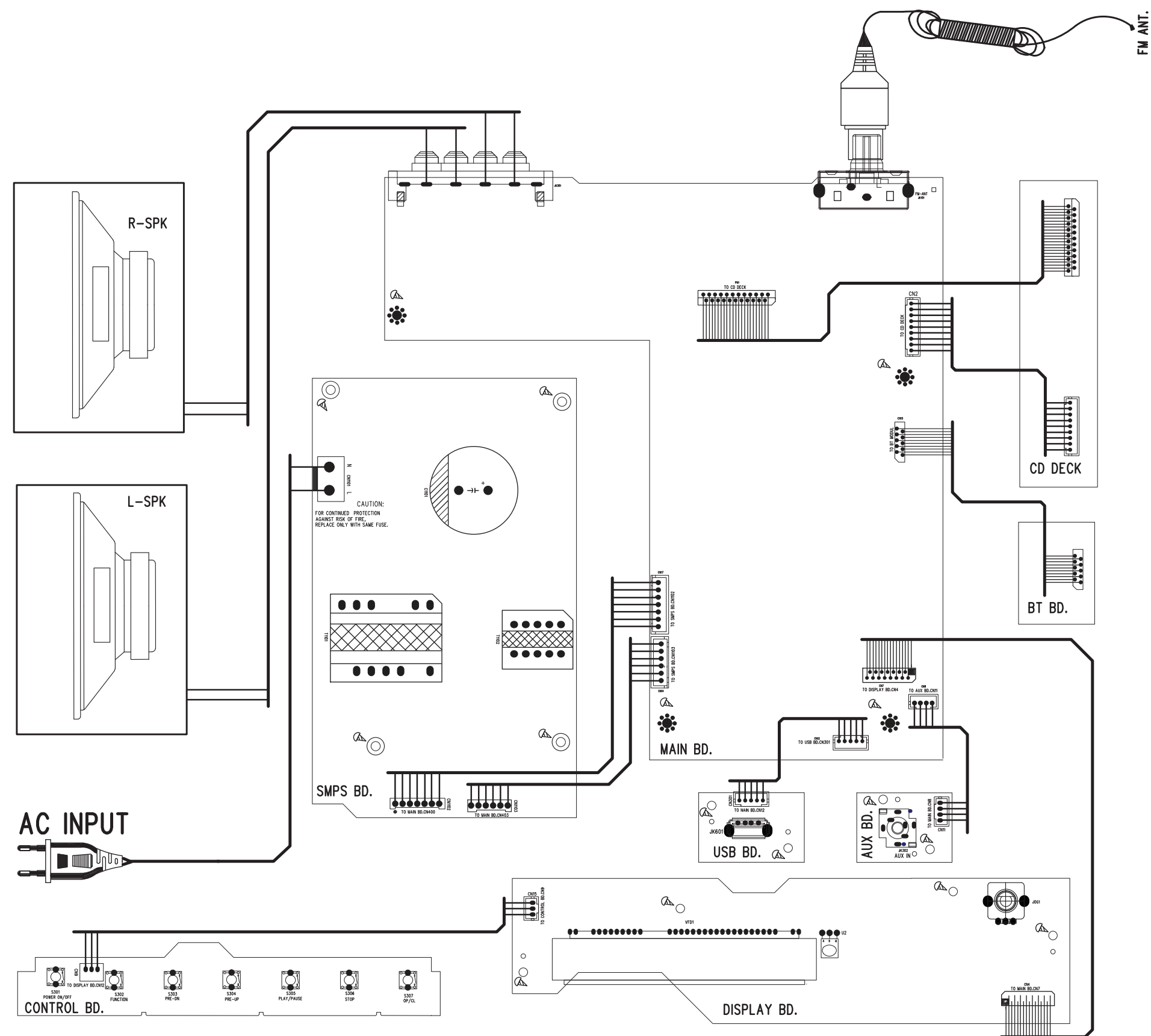
Figure 4. USB playing



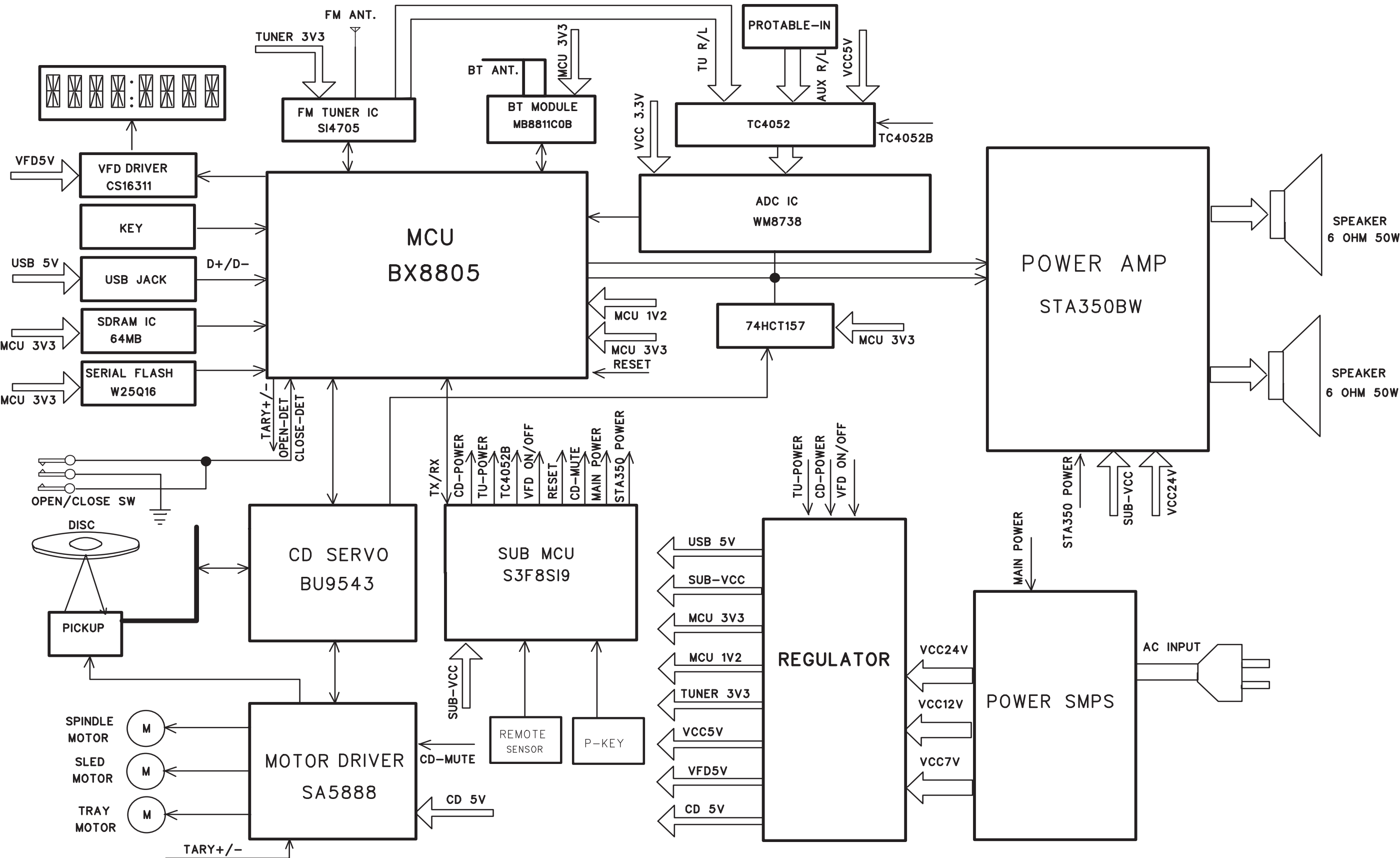
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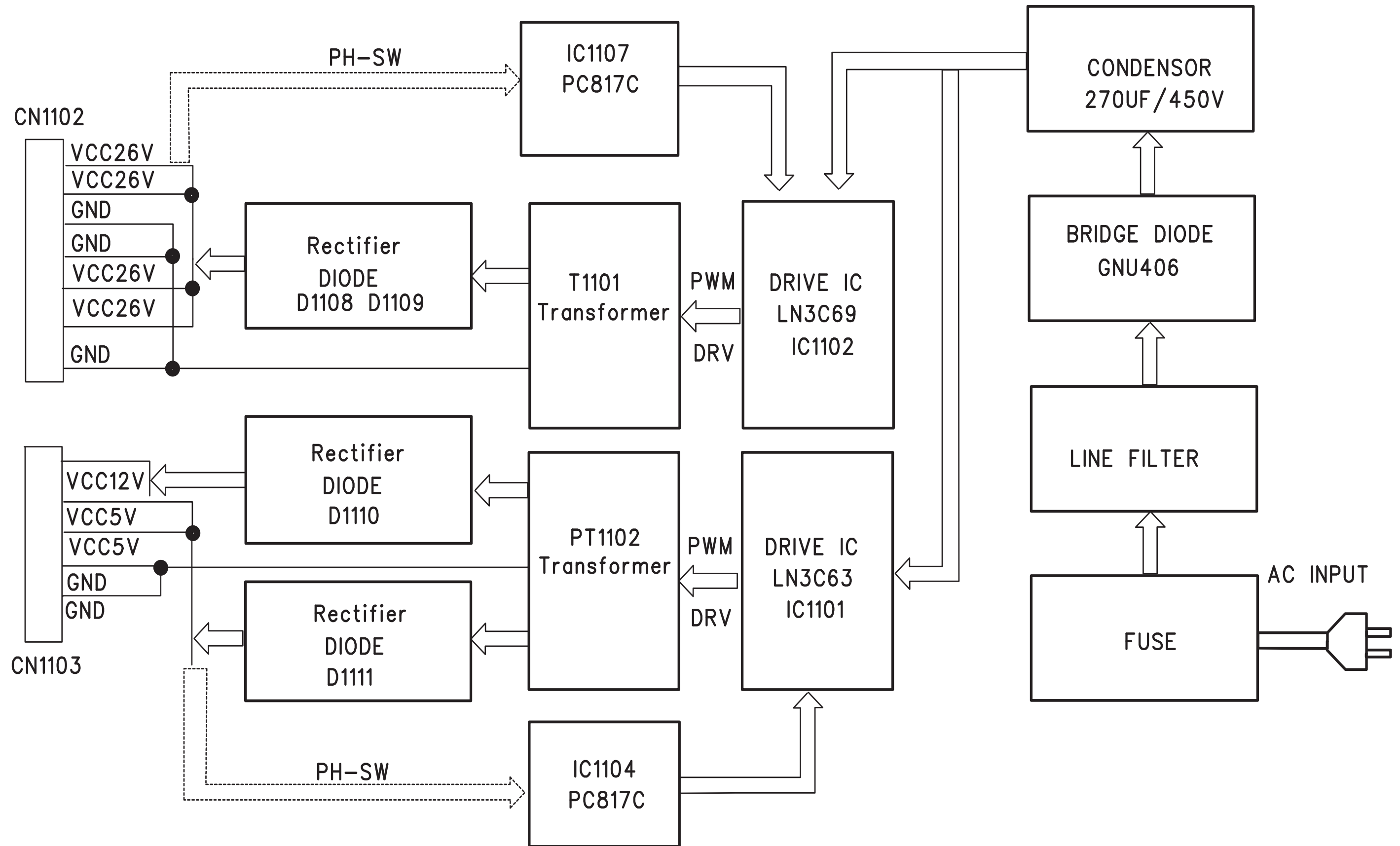
WIRING DIAGRAM



BLOCK DIAGRAMS
1. SYSTEM BLOCK DIAGRAM



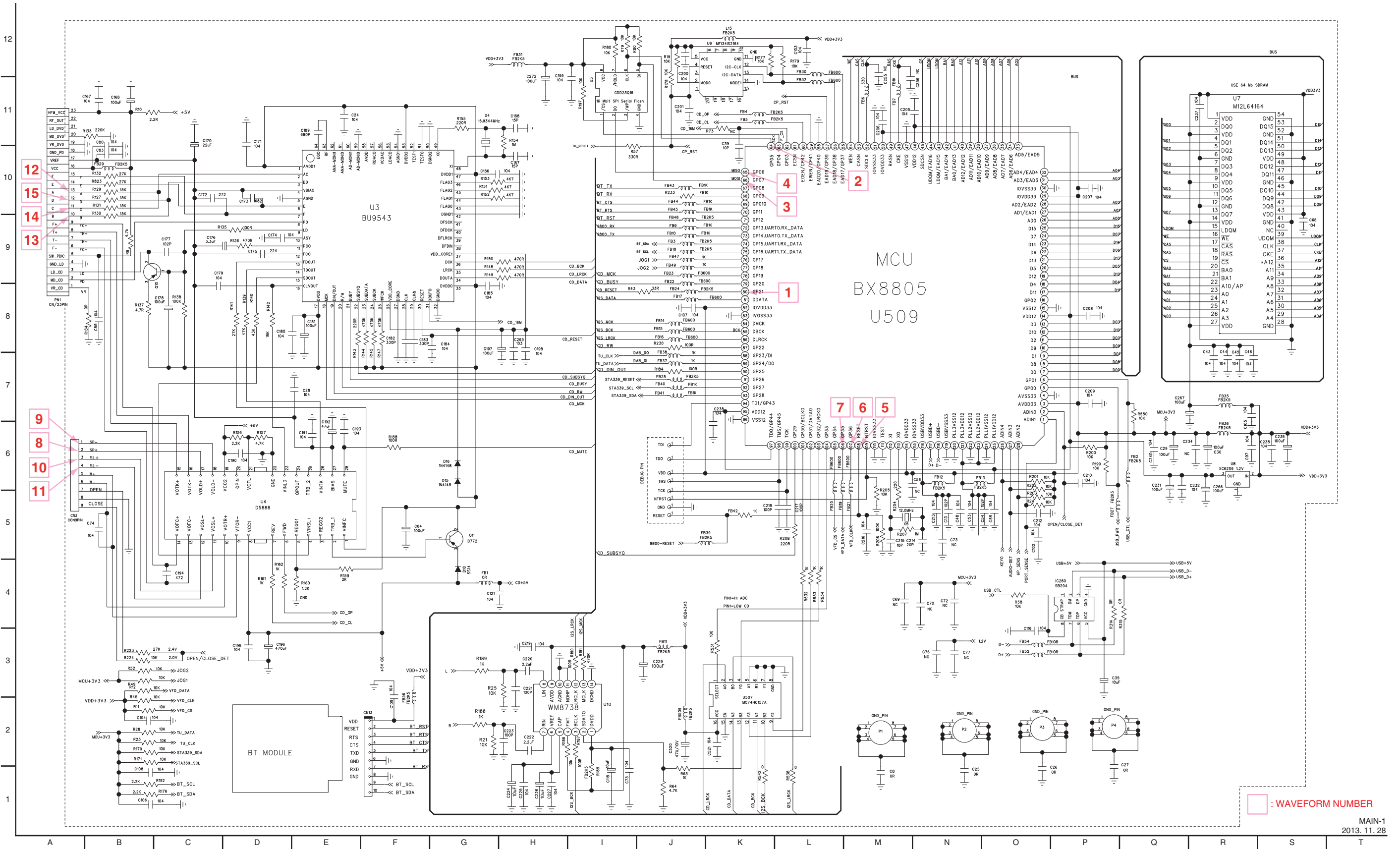
2. SMPS BLOCK DIAGRAM



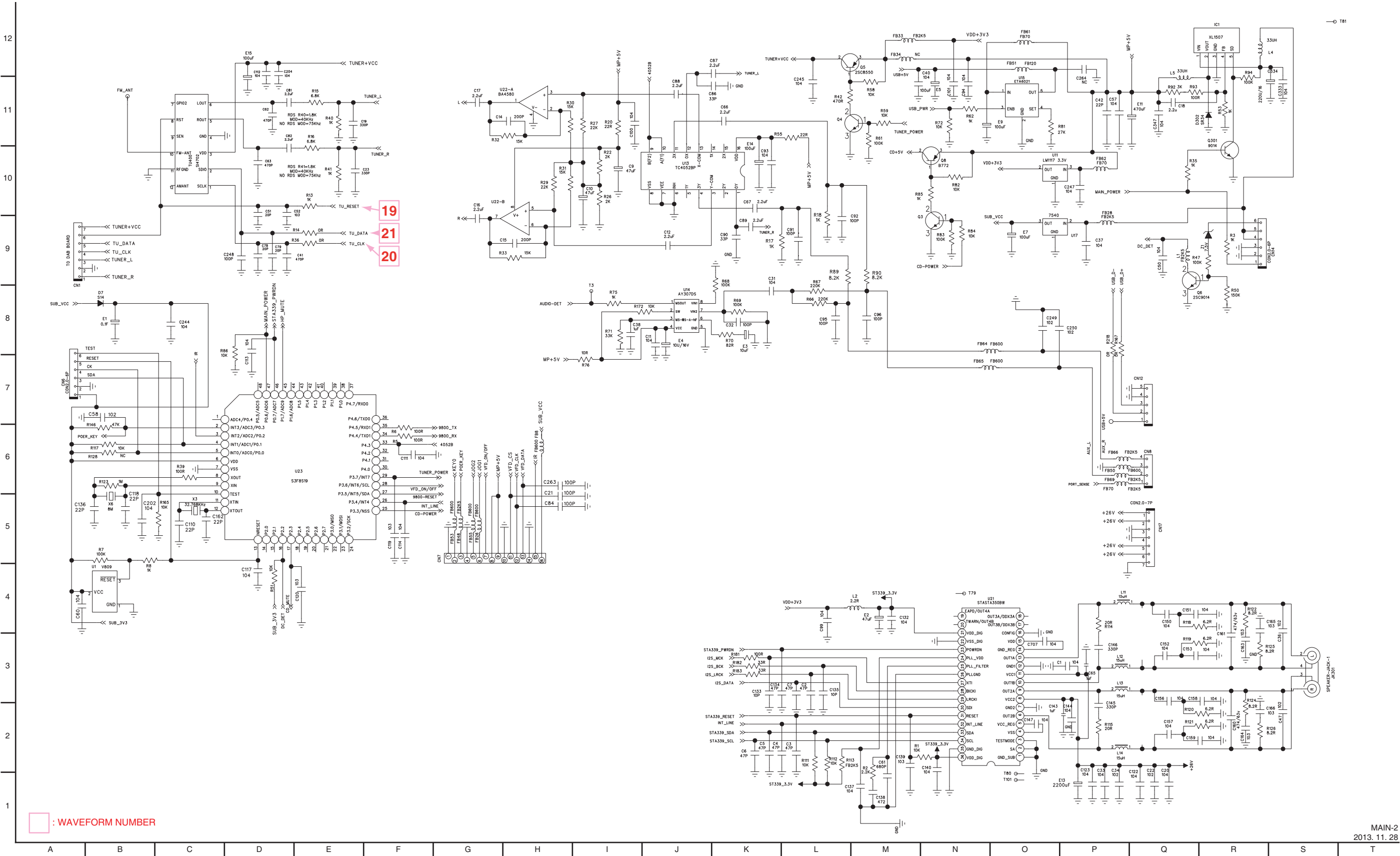
SCHEMATIC FOR EASY IDENTIFICATION. THIS CIRCUIT DIAGRAM MAY OCCASIONALLY DIFFER FROM THE ACTUAL CIRCUIT USED. THIS WAY, IMPLEMENTATION OF THE LATEST SAFETY AND PERFORMANCE IMPROVEMENT CHANGES INTO THE SET IS NOT DELAYED UNTIL THE NEW SERVICE LITERATURE IS PRINTED.

NOTE) Warning
Parts that are shaded are critical with respect to risk of fire or electrical shock

2. MAIN #1 CIRCUIT DIAGRAM

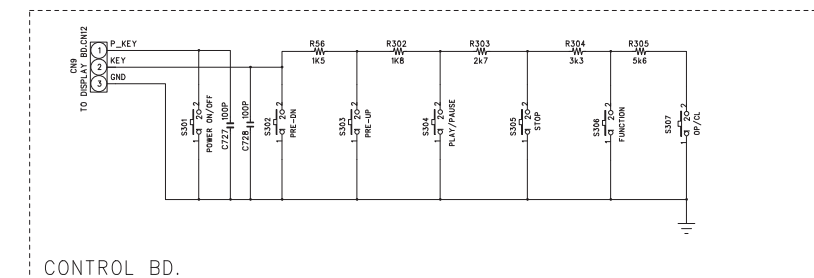


3. MAIN #2 CIRCUIT DIAGRAM



The schematic diagram illustrates the internal circuitry of the DISPLAY BD. Key components include:

- VFD1 (VFD01):** A vacuum fluorescent display driver with multiple pins for data, clock, and control signals.
- IC2 (ET16311):** A 16-bit parallel-to-serial converter with pins for data, clock, and control signals.
- Power Supply:** A 5V supply connected to various pins and components, including a 100µF capacitor (C11) and a 10µF/50V capacitor (C12).
- Resistors:** Various resistors are used for current limiting and signal conditioning, including R46 (220Ω), R44 (220Ω), R34 (220Ω), R54 (220Ω), R78 (10k), R74 (10k), R77 (10k), R735 (10k), R723 (10k), R721 (10k), R722 (10k), R724 (10k), R725 (10k), R726 (10k), R727 (10k), R728 (10k), R729 (10k), R730 (10k), R731 (10k), R732 (10k), R733 (10k), R734 (10k), R735 (10k), R736 (10k), R737 (10k), R738 (10k), R739 (10k), R740 (10k), R741 (10k), R742 (10k), R743 (10k), R744 (10k), R745 (10k), R746 (10k), R747 (10k), R748 (10k), R749 (10k), R750 (10k), R751 (10k), R752 (10k), R753 (10k), R754 (10k), R755 (10k), R756 (10k), R757 (10k), R758 (10k), R759 (10k), R760 (10k), R761 (10k), R762 (10k), R763 (10k), R764 (10k), R765 (10k), R766 (10k), R767 (10k), R768 (10k), R769 (10k), R770 (10k), R771 (10k), R772 (10k), R773 (10k), R774 (10k), R775 (10k), R776 (10k), R777 (10k), R778 (10k), R779 (10k), R780 (10k), R781 (10k), R782 (10k), R783 (10k), R784 (10k), R785 (10k), R786 (10k), R787 (10k), R788 (10k), R789 (10k), R790 (10k), R791 (10k), R792 (10k), R793 (10k), R794 (10k), R795 (10k), R796 (10k), R797 (10k), R798 (10k), R799 (10k), R800 (10k).
- Capacitors:** Various capacitors are used for decoupling and timing, including C11 (100µF), C12 (10µF/50V), C13 (100µF), C14 (100µF), C15 (100µF), C16 (100µF), C17 (100µF), C18 (100µF), C19 (100µF), C20 (100µF), C21 (100µF), C22 (100µF), C23 (100µF), C24 (100µF), C25 (100µF), C26 (100µF), C27 (100µF), C28 (100µF), C29 (100µF), C30 (100µF), C31 (100µF), C32 (100µF), C33 (100µF), C34 (100µF), C35 (100µF), C36 (100µF), C37 (100µF), C38 (100µF), C39 (100µF), C40 (100µF), C41 (100µF), C42 (100µF), C43 (100µF), C44 (100µF), C45 (100µF), C46 (100µF), C47 (100µF), C48 (100µF), C49 (100µF), C50 (100µF), C51 (100µF), C52 (100µF), C53 (100µF), C54 (100µF), C55 (100µF), C56 (100µF), C57 (100µF), C58 (100µF), C59 (100µF), C60 (100µF), C61 (100µF), C62 (100µF), C63 (100µF), C64 (100µF), C65 (100µF), C66 (100µF), C67 (100µF), C68 (100µF), C69 (100µF), C70 (100µF), C71 (100µF), C72 (100µF), C73 (100µF), C74 (100µF), C75 (100µF), C76 (100µF), C77 (100µF), C78 (100µF), C79 (100µF), C80 (100µF), C81 (100µF), C82 (100µF), C83 (100µF), C84 (100µF), C85 (100µF), C86 (100µF), C87 (100µF), C88 (100µF), C89 (100µF), C90 (100µF), C91 (100µF), C92 (100µF), C93 (100µF), C94 (100µF), C95 (100µF), C96 (100µF), C97 (100µF), C98 (100µF), C99 (100µF), C100 (100µF).
- Transformer:** A transformer (T401) is used for power conversion, with pins for primary and secondary windings.
- Diodes:** Various diodes are used for rectification and protection, including D4 (1N4148), D5 (1N4148), D6 (1N4148), D7 (1N4148), D8 (1N4148), D9 (1N4148), D10 (1N4148), D11 (1N4148), D12 (1N4148), D13 (1N4148), D14 (1N4148), D15 (1N4148), D16 (1N4148), D17 (1N4148), D18 (1N4148), D19 (1N4148), D20 (1N4148), D21 (1N4148), D22 (1N4148), D23 (1N4148), D24 (1N4148), D25 (1N4148), D26 (1N4148), D27 (1N4148), D28 (1N4148), D29 (1N4148), D30 (1N4148), D31 (1N4148), D32 (1N4148), D33 (1N4148), D34 (1N4148), D35 (1N4148), D36 (1N4148), D37 (1N4148), D38 (1N4148), D39 (1N4148), D40 (1N4148), D41 (1N4148), D42 (1N4148), D43 (1N4148), D44 (1N4148), D45 (1N4148), D46 (1N4148), D47 (1N4148), D48 (1N4148), D49 (1N4148), D50 (1N4148), D51 (1N4148), D52 (1N4148), D53 (1N4148), D54 (1N4148), D55 (1N4148), D56 (1N4148), D57 (1N4148), D58 (1N4148), D59 (1N4148), D60 (1N4148), D61 (1N4148), D62 (1N4148), D63 (1N4148), D64 (1N4148), D65 (1N4148), D66 (1N4148), D67 (1N4148), D68 (1N4148), D69 (1N4148), D70 (1N4148), D71 (1N4148), D72 (1N4148), D73 (1N4148), D74 (1N4148), D75 (1N4148), D76 (1N4148), D77 (1N4148), D78 (1N4148), D79 (1N4148), D80 (1N4148), D81 (1N4148), D82 (1N4148), D83 (1N4148), D84 (1N4148), D85 (1N4148), D86 (1N4148), D87 (1N4148), D88 (1N4148), D89 (1N4148), D90 (1N4148), D91 (1N4148), D92 (1N4148), D93 (1N4148), D94 (1N4148), D95 (1N4148), D96 (1N4148), D97 (1N4148), D98 (1N4148), D99 (1N4148), D100 (1N4148).
- Connections:** The board is connected to a MAIN BOARD (pins 1-16) and a CONTROL BOARD (pins 17-32).



DISPLAY/AUX/USB/CONTROL
2013. 11. 28

CIRCUIT VOLTAGE CHART

PIN No.	Voltage
U21 STA350BW	
1	GND
2	GND
3	GND
4	22.4
5	25.7
6	1.3
7	GND
8	25.7
9	1.3
10	1.3
11	25.7
12	GND
13	1.3
14	0
15	3.3
16	GND
17	NC
18	NC
19	NC
20	NC
21	3.1
22	GND
23	3.7
24	3.1
25	0.5
26	GND
27	1.6
28	1.6
29	1.6
30	0
31	3.3
32	3.2
33	3.3
34	3.3
35	GND
36	3.1
U10 WM8738	
1	3.32
2	1.53
3	1.65
4	3.21
5	1.65
6	1.65
7	1.65
8	1.65
9	3.32
10	GND
11	GND
12	1.66
13	1.63
14	GND
U22 BA4580	
1	2.48
2	2.48
3	2.47
4	GND
5	2.47
6	2.47
7	2.48
8	4.92
U13 TC4052	
1	1.24
2	NC
3	1.04
4	0.39
5	0
6	GND
7	GND
8	GND
9	0
10	0
11	0.37
12	1.3
13	1.23
14	NC
15	NC
16	5.03

PIN No.	Voltage
TU400 TUNER MODUL	
1	3.17
2	3.2
3	3.3
4	GND
5	0.73
6	0.73
7	0.02
8	3.32
9	NC
10	0
11	GND
12	NC
U5 25116	
1	3.32
2	0.15
3	3.32
4	GND
5	3.32
6	0.01
7	3.32
8	3.32
U4 SA5888	
1	1.6
2	4.6
3	2.7
4	1.6
5	1.25
6	5.3
7	0
8	5.3
9	0
10	0
11	2.7
12	2.7
13	2.7
14	2.7
15	2.7
16	2.7
17	2.7
18	2.7
19	5.3
20	NC
21	5.3
22	GND
23	1.61
24	NC
25	NC
26	1.6
27	1.6
28	3.25
U3 BU9543	
1	3.36
2	1.75
3	1.75
4	1.68
5	GND
6	1.71
7	0
8	0.19
9	2.45
10	1.68
11	1.68
12	1.69
13	1.74
14	1.69
15	1.78
16	1.9
17	3.35
18	3.3
19	1.54
20	3.31
21	3.35
22	GND
23	0
24	3.35
25	1.68
26	2.04

PIN No.	Voltage
27	GND
28	1.65
29	1.68
30	3.32
31	1.8
32	GND
33	3.36
34	1.66
35	1.71
36	1.62
37	2.05
38	0.14
39	0.15
40	NC
41	NC
42	GND
43	GND
44	1.65
45	1.64
46	0
47	3.36
48	1.27
49	1.27
50	GND
51	GND
52	NC
53	3.35
54	GND
55	NC
56	NC
57	NC
58	NC
59	GND
60	NC
61	NC
62	NC
63	1.67
64	1.92
U507 74HCT157	
1	0
2	1.68
3	1.68
4	1.66
5	GND
6	GND
7	GND
8	GND
9	1.63
10	GND
11	1.67
12	0
13	1.3
14	0
15	GND
16	3.33
U509 BX8805	
1	3.32
2	3.32
3	3.32
4	GND
5	3.91
6	3.32
7	2.26
8	0.9
9	2.22
10	0.9
11	1.22
12	0.83
13	0.95
14	0
15	GND
16	0.84
17	0.9
18	0.8
19	0.86
20	0.9
21	0.84
22	0.92

PIN No.	Voltage
23	0.9
24	1.07
25	2.14
26	1.65
27	2.7
28	3.32
29	0
30	GND
31	2.82
32	2.8
33	0.43
34	2.8
35	0.01
36	0.01
37	0.22
38	0
39	0
40	2.5
41	0.05
42	0.06
43	0.06
44	3.19
45	1.17
46	0
47	GND
48	3.29
49	3.32
50	0
51	GND
52	3.2
53	3.28
54	3.32
55	3.32
56	0.01
57	0
58	GND
59	0
60	3.2
61	NC
62	3.2
63	3.2
64	0
65	0.15
66	3.32
67	0.14
68	3.32
69	0.1
70	3.32
71	3.32
72	2.87
73	3.32
74	3.32
75	3.32
76	3.32
77	3.32
78	3.32
79	3.36
80	3.32
81	1.67
82	3.32
83	GND
84	1.56
85	1.65
86	1.65
87	1.66
88	0.02
89	0.02
90	3.3
91	0
92	3.32
93	3.32
94	3.32
95	0.1
96	GND
97	0.05
98	0.04
99	0.05
100	0.07

PIN No.	Voltage
101	1.65
102	0
103	1.66
104	0
105	3.32
106	3.18
107	3.32
108	3.25
109	0
110	GND
111	GND
112	1.63
113	1.67
114	3.32
115	GND
116	3.32
117	3.12
118	0.01
119	GND
120	GND
121	1.16
122	GND
123	1.16
124	GND
125	1.16
126	3.32
127	3.32
128	3.32
U7 M12L64	
1	3.33
2	2.26
3	3.32
4	2.34
5	1.16
6	GND
7	0.85
8	0.83
9	3.32
10	1.68
11	0.86
12	GND
13	0.85
14	3.32
15	0.07
16	3.28
17	3.21
18	3.31
19	3.14
20	2.46
21	0.05
22	0.22
23	2.27
24	2.79
25	2.85
26	0.62
27	3.32
28	GND
29	2.73
30	2.84
31	0.44
32	2.83
33	0.01
34	0.01
35	0
36	0
37	3.22
38	2.1
39	0.06
40	0
41	GND
42	1.58
43	3.32
44	0.91
45	0.85
46	GND
47	0.84
48	0.83
49	3.33

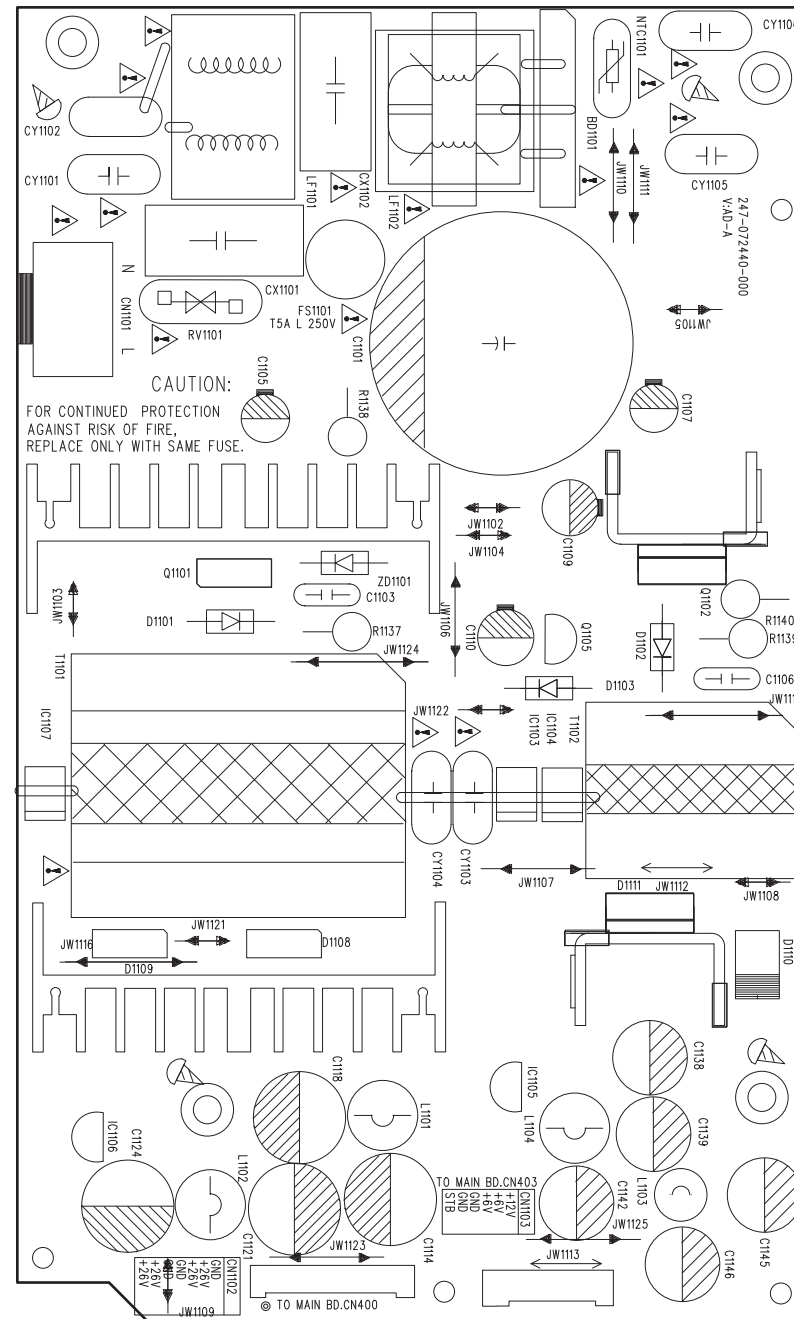
PIN No.	Voltage
50	0
51	0.95
52	GND
53	1.08
54	GND
U14 AY307DS	
1	3.32
2	4.36
3	0
4	5.03
5	GND
6	0.6
7	0.01
8	0
U23 S3F8SI9	
1	NC
2	3.29
3	3.65
4	0.09
5	0.45
6	3.3
7	GND
8	1.15
9	1.34
10	0
11	0.85
12	1.05
13	3.3
14	NC
15	NC
16	0.03
17	3.26
18	NC
19	NC
20	NC
21	NC
22	NC
23	NC
24	NC
25	3.22
26	3.18
27	0
28	3.22
29	0
30	NC
31	NC
32	NC
33	0
34	2.88
35	3.32
36	NC
37	NC
38	NC
39	NC
40	NC
41	NC
42	NC
43	NC
44	NC
45	NC
46	3.29
47	3.11
48	0.03
U15 ETA6021	
1	5.03
2	GND
3	4.36
4	4.89
5	4.88
IC1 TG1007	
1	6.74
2	5
3	GND
4	1.2
5	0
U11 L1117(3.3V)	
1	GND
2	3.3
3	5

U8 XC6206(1.2V)	
1	GND
2	3.3
3	1.2
IC2 CS16311	
1	NC
2	NC
3	NC
4	NC
5	3.24
6	3.24
7	NC
8	3.26
9	3.24
10	NC
11	NC
12	NC
13	NC
14	4.95
15	-26
16	-23.6
17	-26.5
18	-11.9
19	-11.9
20	-11.9
21	-26
22	-26.5
23	-26.5
24	-17.8
25	-17.8
26	-20.7
27	-26.8
28	-26.8
29	-26.8
30	-12.2
31	-9.3
32	-9.4
33	-4.9
34	-27.4
35	-26.8
36	-24.3
37	-24.3
38	-24.3
39	-24.3
40	-24.3
41	-24.3
42	-24.3
43	-24.3
44	-24.3
45	4.9
46	NC
47	NC
48	NC
49	NC
50	NC
51	GND
52	2.5
IC1101 LN3C63	
1	GND
2	1.4
3	2
4	0
5	18.6
6	1.2
IC1102 LN3C69	
1	GND
2	1.6
3	21.6
4	2
5	3.7
6	0
7	18.9
8	0.2

PRINTED CIRCUIT BOARD DIAGRAMS

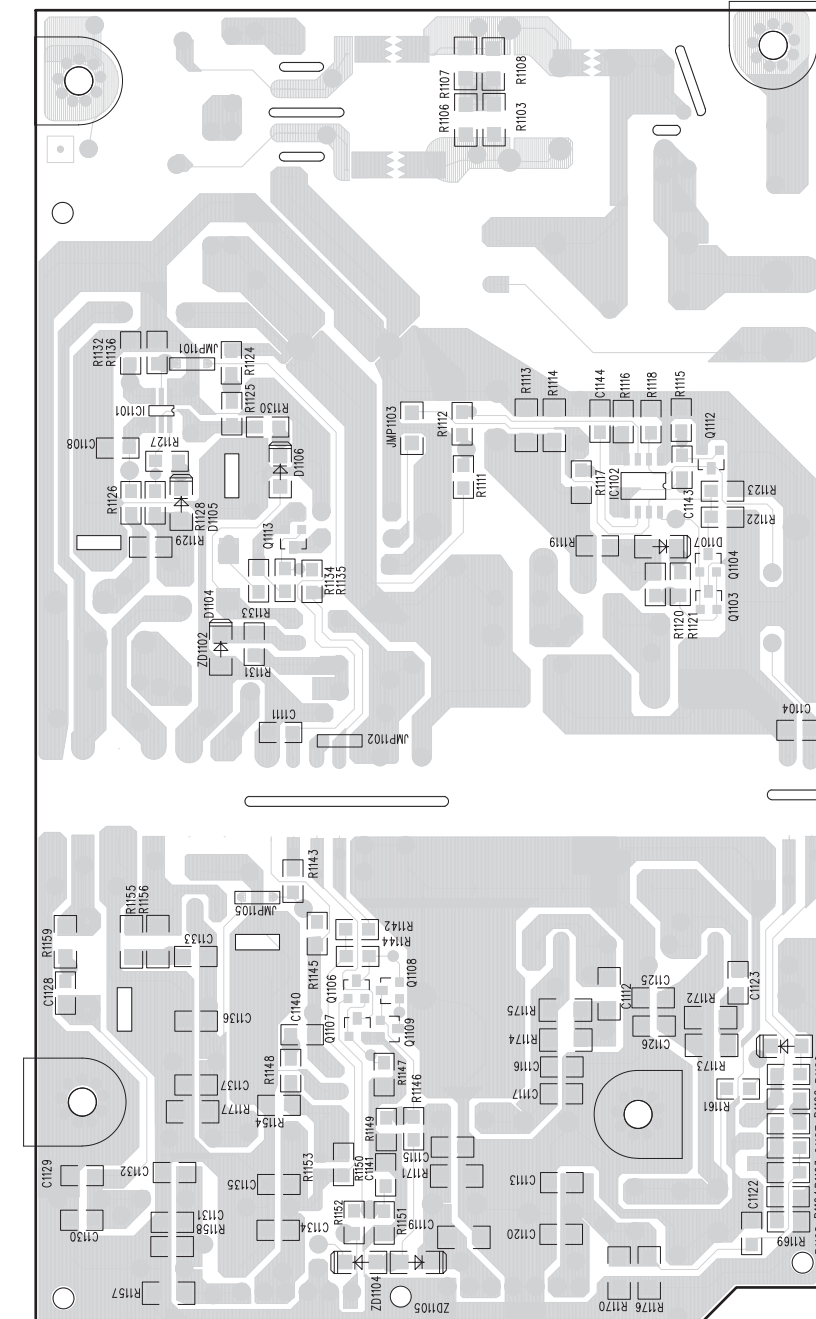
1. SMPS P.C.BOARD


(TOP VIEW)



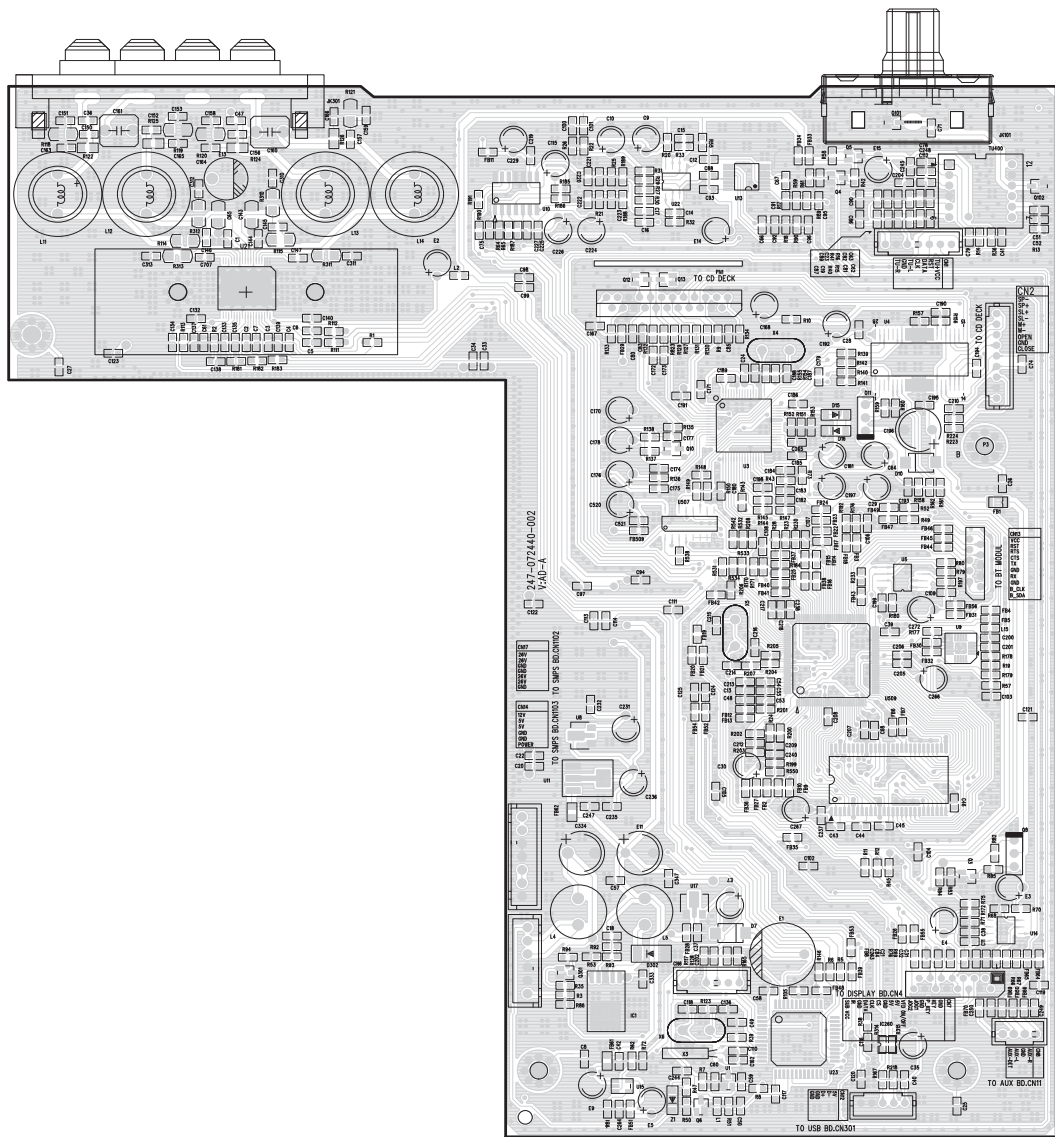
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(BOTTOM VIEW)

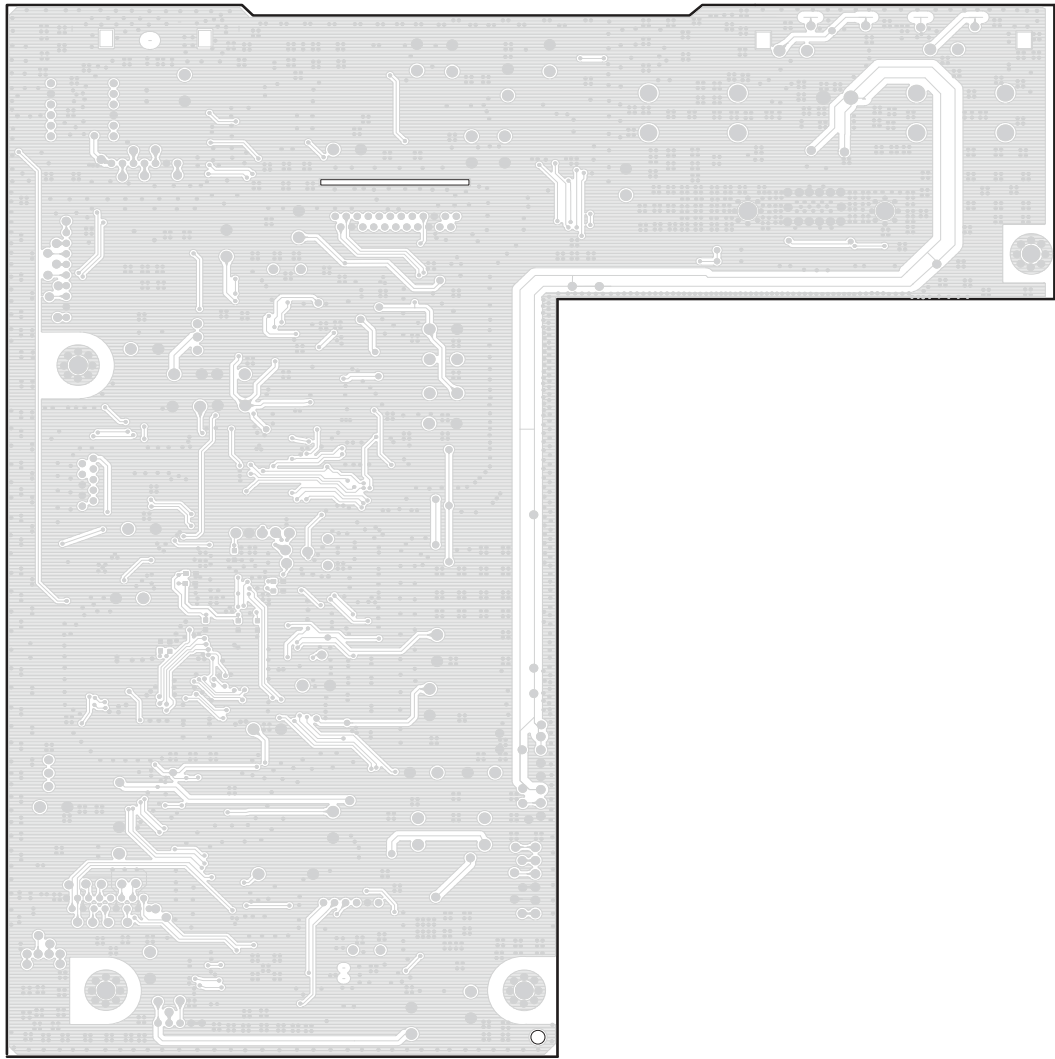


NOTE) Warning
 Parts that are critical with respect to risk of fire or electrical shock.

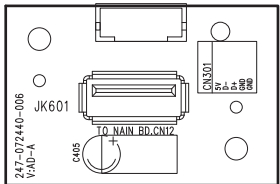
2. MAIN P.C.BOARD
(TOP VIEW)



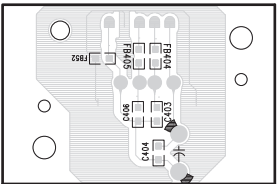
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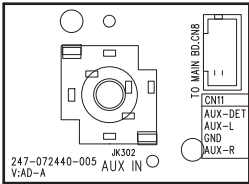
5. USB P.C.BOARD
(TOP VIEW)



(BOTTOM VIEW)



6. AUX P.C.BOARD
(TOP VIEW)



(BOTTOM VIEW)

